PATENTS

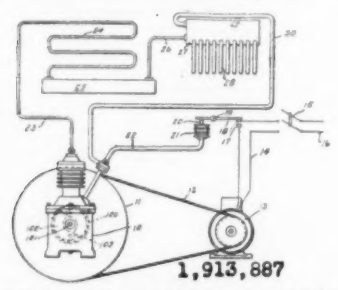
(*Continued from Page 18, Column 5*)

ington, D. C., assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Sept. 7, 1929. Serial No. 390,989. 5 Claims. (Cl. 69—5.)

1. Refrigerating apparatus of the intermittent absorption type including a generator-absorber and an evaporator, means for heating and cooling said generator-absorber including a closed circuit containing the volatile fluid, said circuit having a portion in heat exchange relation with the generator-absorber and a portion remote from the generator-absorber and constituting a condenser, means for heating said circuit and means for air cooling said condenser portion.

1,913,887. MOTOR STARTING DEVICE. Charles F. Kettering and Orin E. Marvel, Dayton, Ohio; said Kettering assignor to Delco-Light Co., Dayton, Ohio, a Corporation of Delaware, and said Marvel assignor, by mesne assignments, to North East Appliance Corp., Rochester, N. Y., a Corporation of New York. Filed June 13, 1927. Serial No. 198,441. 4 Claims. (Cl. 62—3.)

1. In combination, in an automatically operating refrigerating device, a compressor, a fly-wheel therefor, a squirrel-cage



1,913,887

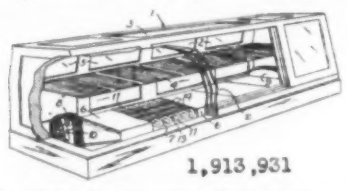
alternating current motor, a main winding and an auxiliary starting winding for said motor, current limiting means for causing a decreased current to flow through said main winding during starting of the motor, centrifugal means for automatically disconnecting said current limiting means and cutting the starting winding out of circuit after the motor attains operating speed, a clutch between said motor and said fly-wheel adapted to be automatically operated to interconnect the motor and fly-wheel after said centrifugal means has operated, and a clutch between said fly-wheel and compressor adapted to interconnect the fly-wheel and compressor after the fly-wheel has been started.

1,913,888. REFRIGERATING APPARATUS. Jesse G. King, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Original application filed Jan. 30, 1928, Serial No. 250,407. Divided and this application filed July 1, 1929. Serial No. 375,086. 10 Claims. (Cl. 62—141.)

8. A cooling element for refrigeration systems comprising coaxial cylindrical shells, one of said shells being corrugated by bending or the like, said shells being arranged to form a spirally disposed passage for liquid to be cooled between said shells and a refrigerant reservoir adjacent one of said shells, means for maintaining in said reservoir a constant level of liquid refrigerant and means for withdrawing gaseous refrigerant from said reservoir above said liquid refrigerant.

1,913,931. REFRIGERATOR AND COOLING UNIT THEREFOR. John S. Booth, Dallas, Tex., assignor to Zero Plate Corp., a Corporation of Delaware. Filed Nov. 16, 1931. Serial No. 575,447. 20 Claims. (Cl. 62—89.5.)

3. A cooling unit for refrigerators comprising a casing forming a refrigerating compartment, a cooling coil included in



1,913,931

said compartment, means for intermittently supplying a cooling agent to said coil, said coil being arranged whereby said cooling agent flows therethrough from one end of said compartment generally towards the other end thereof, and mechanical means for continuously circulating air from the storage compartment of the refrigerator in which said unit is used through said refrigerating compartment in the direction of said flow.

1,913,942. HUMIDIFIER. Arthur B. Modine, Racine, Wis., assignor to Modine Mfg. Co., Racine, Wis., a Corporation of Wisconsin. Filed April 16, 1930. Serial No. 444,699. 9 Claims. (Cl. 261—116.)

1. In a device of the kind described the combination of a member providing a wall of a vertically arranged heat conducting air duct having an air inlet opening at one end and an air outlet at the opposite end, said member being provided with a passage for a heating medium and being provided with a liquid receptacle which projects from one face of said member into said vertically arranged air duct.

1,914,023. REFRIGERATOR UNIT. Walter S. Josephson, New York, N. Y., assignor to Dryice Corp. of America, New York, N. Y., a Corporation of Delaware. Filed Jan. 13, 1930. Serial No. 420,336. 11 Claims. (Cl. 62—91.5.)

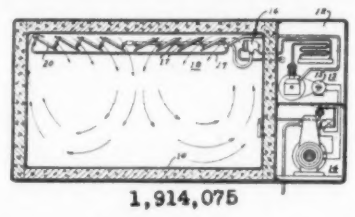
10. A refrigerator unit comprising a container having walls of metal substantially gas-tight except for a high level vent and adapted to enclose a refrigerant and embodying a gas-tight space into which water may drain from the refrigerant.

1,914,032. REFRIGERATING SYSTEM. James T. Mackan, Columbus, Ohio. Filed Dec. 31, 1931. Serial No. 584,182. 3 Claims. (Cl. 62—104.)

2. In a cooling system, the combination with a room having a plurality of cooling units arranged along one of the walls thereof, each of said units comprising a vertically disposed conduit having an air inlet provided in the upper end thereof, a spray nozzle positioned in the upper end of said conduit and through which is forced under pressure a liquid refrigerant effecting thereby an induced flow of air through said conduit into intimate commingled relationship with the spray liquid, a vertically disposed air outlet conduit connected with the lower portion of said first mentioned conduit, the upper end of said outlet conduit terminating substantially in the plane of the air inlet opening of the first mentioned conduit, and a horizontally disposed conduit extension connecting the upper end of said outlet conduit, the horizontal conduit extensions of said units being of variable length and capable of being adjusted in a horizontal plane to distribute the cooled air at different points in the cooling area of said room.

1,914,075. REFRIGERATING APPARATUS. James W. Carl, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed March 31, 1928. Serial No. 266,296. 14 Claims. (Cl. 62—99.)

1. Refrigerating apparatus comprising in combination, a compartment to be cooled and an evaporator in the compartment in-



1,914,075

cluding a plurality of inclined plates, each plate including a conduit for circulating refrigerant, and the conduits of the plates being connected in parallel to provide substantially uniform cooling of circulating air, and means providing a liquid refrigerant inlet and gaseous refrigerant outlet for the evaporator.

1,914,101. REFRIGERATING APPARATUS. Francis R. Bichowsky, Washington, D. C., assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Sept. 20, 1930. Serial No. 483,183. 1 Claim. (Cl. 99—1.)

A refrigerator dish for preventing discoloration and sliminess of fresh meat placed thereon, said dish being constructed of unsized pulp paper adapted to absorb the sweat of the meat and to partially prevent access of air at the point of contact between the meat and dish, said dish being impregnated with a soluble sulphite.

1,914,222. REFRIGERATION. Robert Seth Taylor, Bronx, N. Y., assignor to Electrolux Servel Corp., New York, N. Y., a Corporation of Delaware. Filed April 24, 1928. Serial No. 272,562. 7 Claims. (Cl. 252—5.)

3. A fluid group for use in a refrigerating system comprising methylamine and ethylene glycol.

1,914,235. TUBE FLARING APPARATUS. David A. Benbow and George Kunz, Dayton, Ohio, assignors to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed April 28, 1932. Serial No. 608,051. 10 Claims. (Cl. 153—81.)

7. The method of forming a flare on an end of a tube member by engagement thereof with an element carried by another member which consists in, rotating one of said members and revolving the element about an axis common to both of said members while simultaneously rotating the element about an axis disposed at an angle to the axis of both of said members, and moving one of said members toward the other of said members to cause the element to engage the tube and to expand the wall of the tube outwardly at the end thereof.

10. An apparatus of the character described comprising in combination, means adapted to receive a portion of a tube, means revolvable about the axis of the tube receiving portion of said first named means, said second named means also being rotatable relative to revolutions thereof about an axis disposed at an angle to the axis of the tube receiving portion of said first named means, means for revolving said second named means, means for rotating said second named means during revolutions thereof, said second named means being movable longitudinally relative to said first named means, and means for moving said second named means into engagement with said tube for spinning the wall of the tube outwardly at the end thereof.

1,914,300. EVAPORATOR FOR REFRIGERATORS. Albert E. Schneider, Omaha, Neb. Filed June 26, 1929. Serial No. 373,836. 1 Claim. (Cl. 62—126.)

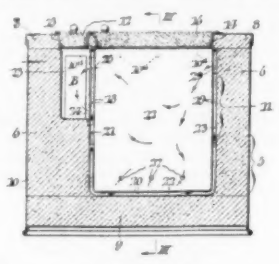
A plurality of refrigerant units each including two parallel cylinders spaced apart, a closing strip for each end of the space formed between the cylinders, and inlet and outlet pipes located at the tops of the units and in alignment with each other for placing the spaces of the cylinders in communication with each other, whereby oil contained within refrigerant and floating on the surface thereof will be the first to pass from one unit to another and back to a compressor to prevent trapping of said oil within the units and pipes.

1,914,337. PROCESS OF PRODUCING SOLID CARBON DIOXIDE. Joseph S. Belt, Amarillo, Tex. Filed Jan. 17, 1931. Serial No. 509,472. 4 Claims. (Cl. 62—121.)

1. The improved process of producing solid carbon dioxide from flue gases composed of about 90% nitrogen and 10% carbon dioxide, which consists in drying the flue gases, placing the dried flue gases under a pressure of between 2,900 pounds and 4,000 pounds, expanding the dried and compressed flue gases to about 150 pounds into a converting chamber, permitting escape of the nitrogen and unsolidified carbon dioxide gas from the converting chamber, and utilizing the escaping nitrogen and unsolidified carbon dioxide gas to cool the compressed and dried flue gases immediately in advance of expansion thereof to a temperature of between -62° C. and -73° C., whereby the flue gases are reduced to a temperature of -104° C. when expanded into the converting chamber.

1,914,349. REFRIGERATOR. Charles E. Bonine, Melrose Park, Pa., assignor to James H. Bell, Philadelphia, Pa. Filed Oct. 24, 1929. Serial No. 402,206. 3 Claims. (Cl. 62—91.5.)

1. In a refrigerator adapted for use of solid carbon dioxide, a casing with pervious walls of thermo-insulate material af-



1,914,349

fording a refrigerating chamber and an offset compartment for accommodation of the solid carbon dioxide, means providing opposing hollow walls and a similar bottom for the chamber whereby circulation of the gas sublimated from the solid carbon dioxide about and through the refrigerating chamber is effected, and provisions affording communication from the bottom of the refrigerating chamber whereby a portion of such circulation is diverted to intervals between opposing solid walls of said chamber for passage through and about the thermo-insulate material of the casing before being permitted to escape into the outside atmosphere.

TRADEMARK

Ser. No. 335,361. Larkin Refrigerating Corp., Atlanta, Ga. Filed Feb. 28, 1933.

Humi-Temp

For Unit of the Forced Draft Type, Used for Refrigerating Purposes and for Regulating Humidity in Household and Store Refrigerators for the Preservation of Foodstuffs.

Claims use since Nov. 14, 1932.

Representative for Majestic Aids in Catching Thief

KANSAS CITY, Mo.—Frank V. Archer, field representative for Chicago's Grigsby-Grunow Co., became a hero in 10 minutes here recently when he took a leading part in a local disarmament movement.

Mr. Archer was in the lobby of the President hotel when an armed man stepped up to the hotel auditor and demanded the $800 the latter had just brought from the bank. When the stick-up man raced out of the building, the Majestic man, with Doorman Earl Carver, led the chase after him.

Three blocks later, Doorman Carver left the ground in a tackle that brought the money-carrier to the ground. The bandit was just pointing his gun at the doorman when Mr. Archer raced up and tore the weapon out of his hands. The three men then remained on the sidewalk until the police relieved heroes Archer and Carver from their charge.

10 Sales Are Closed by Single Presentation

MUNCIE, Ind.—Shortly after the C. M. Kimbrough Hardware Co. had been appointed Westinghouse dealer here, Field Salesman Golliher of the Westinghouse Electric Supply Co. in Indianapolis sent the company off to a flying start with 10 sales in a single evening.

While in Muncie, Mr. Golliher secured from a Westinghouse user the names of 10 prospects—all employes in one factory—then invited all of them to meet in the evening at the Roberts hotel. After a demonstration, all of the 10 prospects signed orders for refrigerators.

CALIFORNIA FIRM TO BUY SURPLUS STOCKS

SAN FRANCISCO—Recently organized by Clarence F. Pratt here is the California Refrigerator Co., which will buy and sell used household electric refrigerators and surplus stocks of refrigerators, wholesale and retail refrigeration accessories, and service all makes of domestic units.

Mr. Pratt, who is also president of the Outdoor Christmas Tree Association of California and chairman of the Mt. Davidson Easter Service Committee, stated in his announcement bulletin that he would give baby Christmas trees to the first 50 San Franciscans visiting his new store and to the first 50 visitors from outside San Francisco.

He also announced in his circular that visitors at his sales room would see there "oldest living iceless refrigerator in California," brought in from the Kettleman Hills oil fields. Made of rough boards and burlap, topped by a shallow dishpan, and with its legs encased in tin cans, the ancient refrigerator was described by Mr. Pratt as follows:

"It has a Monitor-like top, Leonard door-opener, Westinghouse air brakes, shelfless door, Majestic lines, and Norge rollator air chambers."

NEW YORK HOME COOLED BY FRIGIDAIRE

PORTCHESTER, N. Y.—William L. Ward, president of Russell, Burdsall and Ward, manufacturer of nuts and bolts, purchased nine tons of Frigidaire air-conditioning equipment last week for his Portchester home.

C. F. Travis, air-conditioning salesman in Westchester county, made the sale. Mr. Ward also is Republican party leader in his county.

Hotels, Restaurants and Clubs Are Buying Mechanical Beer Cooling Equipment NOW!

RESERVE your space now for the July issue of Refrigerated Food News.★ This issue will carry your beer-cooling equipment story to 13,000 immediate buyer prospects made up of larger hotels, restaurants, clubs, delicatessens, groceries, etc.

Refrigerated Food News is edited for the *user* of all types of commercial refrigeration.

The July issue will carry a directory of beer-cooling equipment manufacturers together with installation stories on the representative beer-cooling equipment in use today.

This information is in great demand by your prospects. It will be a most effective background for your advertising.

Advertising forms for the July issue close July 10. Reserve your space today.

★ Do not confuse this issue with the July 5 issue of Electric Refrigeration News, which will carry complete directory and *specifications* on beer-cooling equipment.

Refrigerated Food News will reach your *user prospects.*

Electric Refrigeration News will help you build distribution by carrying your message to *distributors* and *dealers.*

You need the services of *both.*

H. W. Mateer, Adv. Mgr.
Refrigerated Food News
550 Maccabees Bldg.
Detroit, Mich. Date.....

Reserve ..... column inches in the July issue of REFRIGERATED FOOD NEWS.

Company Name .....

Street Address .....

City and State .....

Signed by .....

THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

Registered U. S. Patent Office

ESTABLISHED 1926. MEMBER AUDIT BUREAU OF CIRCULATIONS. MEMBER ASSOCIATED BUSINESS PAPERS.

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ISSUED EVERY WEEK

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DETROIT, MICHIGAN, JULY 5, 1933

Entered as second-class matter Aug. 1, 1927

THREE DOLLARS PER YEAR
TEN CENTS PER COPY

44,525 ORDERS ENTERED IN JUNE BY KELVINATOR

All-Time Record Set For June; 2nd Price Raise Probable

DETROIT—Orders received by Kelvinator Corp. in June passed that company's all-time record, H. W. Burritt, vice president in charge of sales, announced on July 1. June orders totalled 44,525—a number which is 129 per cent greater than that for the best previous June in Kelvinator history.

"We interpret this lengthening of the season as the best proof that national economic programs now under way, as well as those in the offing, have restored buyer confidence to such an extent that consumers, foreseeing a period of rising prices, are rushing to buy the things they have been wanting and needing," said Mr. Burritt.

Kelvinator is at present inaugurating the most extensive midsummer advertising and sales campaign in its history, Mr. Burritt said.

The majority of the company's dealers, still selling refrigerators purchased before the company's June 28 price increase went into effect, are being informed that a second price increase is probable, made necessary by the continued rise in raw material costs.

VEGETABLE SECTION USED ON 7-FT. MAJESTIC MODEL

CHICAGO—A non-refrigerated vegetable storage compartment of 1-cu. ft. capacity is being made available as accessory equipment for model 700 Majestic refrigerators by Grigsby-Grunow Co. here.

The compartment can be installed on any model 700 Majestic refrigerator, but cannot be shipped already assembled with the box. It is inserted between the refrigerator proper and the leg base, elevating the food compartment 17 in. from the floor.

Purpose of the new compartment is to provide an easily accessible storage space for fruits and vegetables not ordinarily stored in the refrigerator, according to C. C. De Wees, assistant advertising manager.

N. Y. Association Adopts Uniform Practice Rules

By Phil B. Redeker

NEW YORK CITY—Refrigerator Association, Inc., of this city, a cooperative organization with membership limited to distributors of refrigeration equipment (including utilities), lists among its accomplishments the establishment of uniform trade practices, the exertion of united action to obtain for distributors a more equitable deal in apartment house contracts, and the providing of a clearing house for credit information and arbitration of disputes.

Most recent step to be taken by the association, scheduled to go into effect July 1, is the establishment of a minimum down payment of 20 per cent for installations of commercial refrigeration equipment, to be adhered to by all members of the association.

Outstanding among the other deeds

(*Concluded on Page 7, Column 1*)

MAJESTIC SHIPMENTS REPORTED FOR JUNE

CHICAGO—Total unit shipments of Majestic radios and refrigerators in June were in excess of 49,000, according to Le Roi J. Williams, vice president and general manager of the Grigsby-Grunow Co., manufacturer.

Each month of this year has shown an increasing number of shipments, the peak being reached in June. The July production schedule on refrigerators will be almost equal to that for the preceding month, Mr. Williams says.

June shipments of radios averaged more than 1,500 sets daily—six times the figure for June of 1932, and 15 times that of June, 1931.

Jane Froman to Sing on Frigidaire Program

NEW YORK CITY—Jane Froman, widely-known radio singer, is to be featured on the new Frigidaire program which is scheduled to begin July 14 over a Columbia Broadcasting System network of 54 stations.

The program will be broadcast Wednesdays and Fridays from 10:30 to 10:45 p. m. Other artists scheduled to appear on the Frigidaire program are Jacques Renard and his orchestra (of Camel quarter-hour fame) and Howard Marsh.

APPLIANCE MEN TALK AT ANNUAL A. F. A. ASSEMBLY

Daily, Leavenworth, Quinn Give Views On Advertising

By Elston D. Herron

GRAND RAPIDS, Mich.—An insight into the plans, the purposes, and problems which underlie the advertising of companies engaged in manufacturing and selling electrical appliances was given by several executives of the industry when they addressed sessions of the Advertising Federation of America's annual convention here on Monday, Tuesday, and Wednesday of last week.

About 1,000 men and women—representing agencies, associations, and advertising departments of all kinds of companies—packed the Hotel Pantlind during the convention.

"Coats off" was the order of the convention, for with the exception of the few sessions held in the air-cooled assembly room of Grand Rapids' beautiful civic auditorium, meetings took place in the withering heat of hotel rooms and auditorium board rooms.

First talk at the sales executives' meeting on Tuesday afternoon was given by Walter J. Daily, advertising and sales promotion manager of General Electric Co.'s specialty appliance sales department, who spoke informally on "A New Deal in Advertising."

One of the first of Mr. Daily's remarks was that the sales end of a business is entirely too complicated for a sales manager to give much of his

(*Continued on Page 4, Column 1*)

GRIFFIN NAMED MANAGER OF N. Y. SERVEL BRANCH

NEW YORK CITY—Patrick J. Griffin has been appointed manager of the New York branch of the Servel, Inc., sales organization, and will be in charge of wholesale and retail activities of the company in the states of New York, Pennsylvania, and Connecticut, according to F. E. Sellman, Servel vice president.

Mr. Griffin comes to New York from Chicago, where he has been manager of the Chicago branch of Servel Sales, Inc.

Room Coolers and Brewing Debated By A. S. R. E.

By John T. Schaefer

CHICAGO—Latest developments in the design of self-contained room coolers, absorption refrigerators, and breweries, and technical problems involved in air conditioning, solid CO_2 refrigeration, and condenser construction were some of the subjects which speakers considered at the Western meeting of the American Society of Refrigerating Engineers, Monday and Tuesday of last week. Wednesday was Engineers' Day at A Century of Progress, with some 15 engineering societies which were meeting last week, participating.

Although A Century of Progress competed with the convention for the attention of the delegates, the A. S. R. E. sessions were well attended. The Hotel Sherman was headquarters for the convention, meetings being held in the Bal Tabarin, air cooled by an ice system. Local arrangements were in charge of O. A. Anderson and Ben Seaman, president and secretary respectively, of the Chicago section.

The convention started officially Monday noon with a welcome luncheon, opened by A. W. Oakley, president of the society, and addressed by Col. Edward N. Wentworth, director of the live stock research bureau of Armour Co. This affair, as well as the remaining events of Monday, was reported in the last issue of ELECTRIC REFRIGERATION NEWS.

Although many attended the session without registering, total official registration for the convention reached 189, according to D. L. Fiske, national secretary. The next meeting, it was decided in council meeting, will be

(*Concluded on Page 6, Column 1*)

NORGE REPORTS INCREASE IN COSTS OF MATERIALS

MUSKEGON, Mich.—Norge Corp. manufacturing and material costs have jumped sharply since April 1, according to a survey just compiled by Herbert Morley, plant manager here.

Following advances in the price of supplies since that date have been noted: vitreous steel, 9 per cent; insulation material, 20 per cent; cold rolled steel, 21 per cent; electric motors, 20 per cent; lumber, 25 per cent; condensers, 12 per cent; copper, 60 per cent; tin, 90 per cent; miscellaneous items, under which head come screws, nuts, bolts, and small stampings, 20 per cent.

MANUFACTURERS MEET THURSDAY TO DRAFT CODE

Johnston to Preside at Conference of Executives

DETROIT—Approximately 100 manufacturers of electric refrigerators and materials and parts which enter into their construction will meet in the auditorium of the Maccabees building, Detroit, the afternoon of July 6, to discuss ways and means for complying effectually with the provisions of the National Industrial Recovery Act.

The meeting was called by G. M. Johnston, president of Universal Cooler Corp., Detroit, and chairman of the Refrigeration Division of the National Electrical Manufacturers Association.

Invitations were sent to all manufacturers of complete household electric refrigeration systems. In Mr. Johnston's announcement in the last issue of the NEWS it was stated that makers of parts and materials, and other manufacturers having an important interest in the industry could also obtain invitations on request.

A preliminary meeting of cabinet manufacturers has been called by Walter Seeger, vice president of the Seeger Refrigerator Co., for 10 o'clock that morning, while Lester Larkin, president of the Larkin Refrigerating Corp., has called a similar 10 o'clock meeting of evaporator manufacturers.

Meeting rooms have been provided by ELECTRIC REFRIGERATION NEWS, which will serve a buffet luncheon from 12 to 2 o'clock in the Maccabees auditorium and a dinner at 7 p. m. at the Wardell hotel.

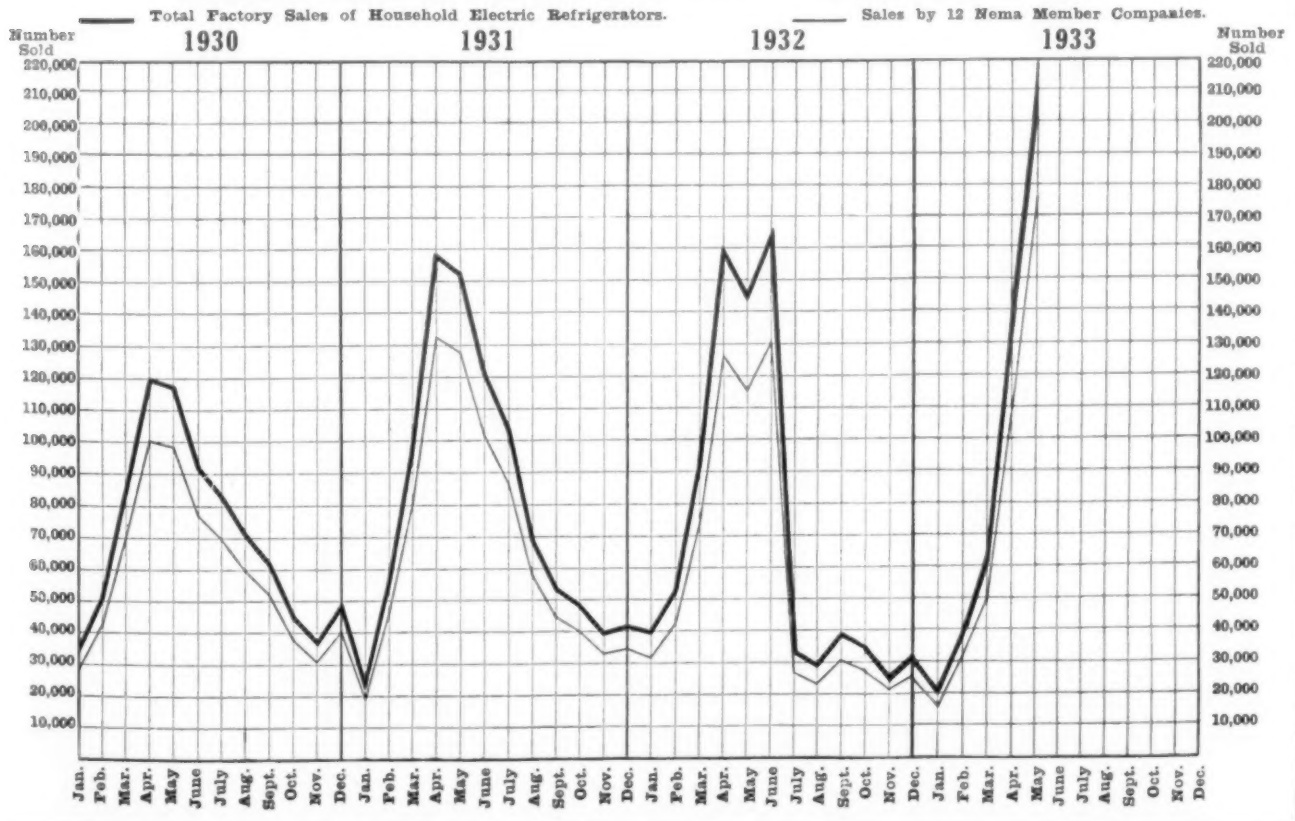
In a prepared statement, Louis Ruthenburg, who is consultant for the Refrigeration Division of the National Electrical Manufacturers Association, and who has been in charge of the preliminary work in connection with the preparation of a code, said:

"The development of the Industrial Recovery Act has been closely followed since it was introduced into the House of Representatives and until, and since it became a law. The Refrigeration Division of Nema has constantly studied the most effective means of complying with the requirements of the law and of insuring to its mem-

(*Concluded on Page 20, Column 1*)

INDUSTRY SELLS 473,700 HOUSEHOLD UNITS IN 5 MONTHS

Monthly Sales to Dealers Reach a New High Peak in May



Five Months Totals Less Than 1931 and 1932 But June Figures Will Probably Make a New Record For First Six Months

	1930	1931	1932	1933
January Totals	34,000	22,700	39,400	20,400
Nema only	28,356	18,917	31,527	16,351
February Totals	51,000	54,700	52,600	38,000
Nema only	42,362	45,503	42,109	30,422
March Totals	84,500	96,600	91,500	62,300
Nema only	70,291	80,320	73,215	49,823
April Totals	121,000	159,300	158,300	134,000
Nema only	100,530	132,414	126,620	107,182
May Totals	118,500	153,500	144,200	219,000
Nema only	98,621	127,671	115,348	175,119
First Five Months Totals	409,000	486,800	486,000	473,700
Nema only	340,130	404,825	388,819	378,897
June Totals	93,000	122,200	163,300	
Nema only	77,174	101,492	130,607	
July Totals	83,000	103,800	33,500	
Nema only	69,506	86,419	26,794	
August Totals	72,000	69,800	28,900	
Nema only	59,680	58,021	23,124	
September Totals	62,500	53,200	38,100	
Nema only	51,969	44,262	30,513	
October Totals	45,000	48,100	34,100	
Nema only	37,576	39,999	27,294	
November Totals	37,000	39,600	26,300	
Nema only	30,777	32,879	21,029	
December Totals	48,500	41,500	30,100	
Nema only	40,238	34,459	24,078	
Annual Totals	850,000	965,000	840,300	
Nema only	707,050	802,356	672,258	

Charted and tabulated are estimated sales of household electric refrigerators. The heavy line in the chart represents sales by all companies in the industry, while the light line indicates sales by the 12 companies belonging to the National Electrical Manufacturers Association (Nema). The all-industry curve is based upon the assumption that non-Nema manufacturers account for 20 per cent of the total sales (as they did in 1932). One non-Nema company (Grunow Corp.) has produced 50,000 of the 95,000 attributed to non-Nema companies in the first five months of 1933. The remaining 45,000 appears to be a conservative estimate for all other non-Nema firms.

SPECIFICATIONS OF DRAFT & BOTTLE BEER COOLERS IN THIS ISSUE

BY GEORGE F. TAUBENECK - - -

A. S. R. E. and Air Conditioning

Chief topic of discussion at the Twentieth Western Meeting of the American Society of Refrigerating Engineers in Chicago's Hotel Sherman last week was air conditioning.

From the number and quality of the papers on that subject read before the assembled engineers (who are without doubt the World's Most Critical Body), it might be assumed that progress in developing air-conditioning equipment which might be adequate and susceptible to quantity production as well is proceeding apace.

Up until recently there has been a general feeling throughout the industry that public acceptance for air conditioning was increasing faster than its engineering, that people were clamoring for something the industry was not ready to supply.

It now appears, however, as if unit coolers are becoming quite feasible and economical; and the rapid strides being made in all branches of this new refrigeration field give rise to the hope that by next year, at least, the industry should be able to make some real money out of air conditioning.

It's a cinch that A Century of Progress exposition at Chicago is making the hordes of visitors who pass through its gates (the number of times the turnstiles have clicked for paid customers is now approaching four million, and the Fair has not yet been open six weeks) conscious of the possibilities and advantages of air conditioning.

The air-conditioned theater in the General Motors building, for instance, is continually packed with long waiting lines standing outside its doors. Complaints have been registered that the Sky Ride's rocket cars should be air conditioned, too. Almost everywhere at the Fair one hears people talking about this new wonder of science.

Chicago's most beautiful (and most expensive) night club, the Chez Paree, is now cooled with an excellent system installed by the United States Air Conditioning Corp. BILL GRUNOW and his sales manager, H. C. BONFIG, will testify to its effectiveness.

SOPHIE TUCKER'S 225 Club is also air conditioned. Here the vents and pipes of the system (artistically colored and lighted) are the dominant features of the functionally designed interior decorations.

College Inn at the Hotel Sherman, where BUDDY ROGERS plays and where the A.S.R.E. banquet was held, is made comfortable by an effective cooling system.

* * *

Personal Jottings

Old friends by the score attended the A. S. R. E. meeting. GLENN MUFFLY, retiring president, was there escorting inventor CARL ZORZI of Italy around. Mr. Muffly had just returned from a four-weeks tour in behalf of his off-peak refrigeration idea.

Impressive A. W. OAKLEY, the new president of the society, promises that more will be done for members next year than ever before. While he doesn't exactly propose a Rooseveltian New Deal, he does plan several innovations. Next meeting will be at New York City in November, in conjunction with the American Society of Mechanical Engineers.

The highly respected A. R. STEVENSON of General Electric was there, as was W. M. TIMMERMAN, commercial refrigeration engineer for the same concern, and his wife. HARRY WILLIAMS, able Frigidaire chemist who helped develop the famous dichlorodifluoromethane (F-12) left his laboratory long enough to drop in on the sessions.

Talked also with C. T. BAKER, affable designer of heavy-duty refrigeration machinery, and his fellow Atlantan, O. J. WILLOUGHBY. IRV KNUDSEN, DAN WILE, DICK TOWNSEND, and AL WITTE of the American Radiator contingent were most hospitable—and most busy. Not a customer escaped. Dan gave a learned talk before a group of service men in Chicago Tuesday evening.

Wednesday was Engineers' Day at the Fair, with appropriate ceremonies out at Soldier Field. The Porcelain Enamel Institute met that day at the Medinah Athletic Club. Among the other engineering societies meeting concurrently were the American Society of Mechanical Engineers, American Institute of Electrical Engineers, American Association for the Advancement of Science, Institute of Radio Engineers, American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, American Society for Testing Materials, Society of Industrial Engineers, Society for Promotion of Engineering Education, American Association of Engineers, American Foundrymen's Association, and Western Society of Engineers.

* * *

An Old Hand Offers Some Tips

John L. Martin, oldest G. E. dealer in Texas, and Edwina Nolan, G. E. home service director, rehearse some selling points.

Prof. Piccard, Jack Benny, Roscoe Ates

Spent several, yea, many, enjoyable hours with FRED BOLLMEYER, suave publicity man from Maxon, Inc., and JIM IRWIN, newly appointed publicity director of Frigidaire Corp., at the Fair. Jim had his young and attractive wife along to see the sights.

Prof. AUGUSTE PICCARD, who has traveled higher into the air than any other human being, and who expects to make another journey into the stratosphere from the Chicago exposition grounds soon, was a Saturday visitor to the General Motors building.

Stataflex, Frigidaire's method of utilizing aluminum foil insulation, interested Prof. Piccard particularly; for insulation is one of the problems he must solve in building the balloons which carry him miles above the earth's surface.

JACK BENNY and MARY LIVINGSTONE turned up at the General Motors building Thursday with Mary's sister, Bebe, and posed for a number of photographs. Jack had just signed a General Motors radio program contract, and was feeling top-hole. Incidentally, Frigidaire has just signed one of our favorites, beauteous JANE FROMAN, for its next radio series.

Sales of electric refrigerators are being made off the floor at the General Motors building almost every day. One effective piece of bait for those who visit the Frigidaire exhibit is an attractive World's Fair souvenir medal, which is given to customers who purchase Frigidaires there. J. C. COFFEY, resident manager of the exhibit, grins an opinion that people buy the refrigerators to get the medals!

ROSCOE ATES, stuttering movie comedian, and his personable daughter visited the General Electric exhibit Wednesday, and were properly impressed. So did, and was, PETE DESJARDINES, 1928 Olympic champion diver.

Parenthetically, we might remark that we kept our car at the Hotel Sherman garage, where the attendants parked it every day between two Cadillac V-16 creations. We found out soon that one of them, a yellow convertible phaeton, belonged to ROSCOE ATES, whereas the other, a green roadster, is the property of BUDDY ROGERS.

* * *

Edwina Nolan Goes South

Had a fine visit with Miss EDWINA NOLAN, General Electric's home service director. Miss Nolan has recently returned from a trip through the South and West, where she talked about General Electric appliances to prospects, dealers, and salesmen.

At the Edmundson Refrigerating Corp., G. E. distributorship in Houston, Tex., she gave a talk on electric refrigeration before a group of 76 women, and 12 of them bought G. E.'s before they left the building. At another meeting there, she talked to salesmen's wives about the all-electric kitchen, and Mr. Edmundson offered a dishwasher to the woman selling the most of these units.

In Galveston, Miss Nolan talked to 76 prospects about features of the General Electric kitchen, and spoke before salesmen's meetings in Beaumont, Port Arthur, Lake Charles, and Navasota. She stopped in New Orleans to help Mrs. Carter, home service director for General Appliances, Inc., plan a program of home economy demonstrations.

Down in Birmingham, she lent a hand in planning a series of July meetings at the Bromberg store, where a brand new G. E. kitchen has just been installed. In Fort Worth, Miss Nolan turned sales instructor, and gave a complete kitchen-sales training course to salesmen of S. C. Griswold, Inc., distributor. Between sessions of the school, she held an employes' meeting and a cooking school at Monnig's department store.

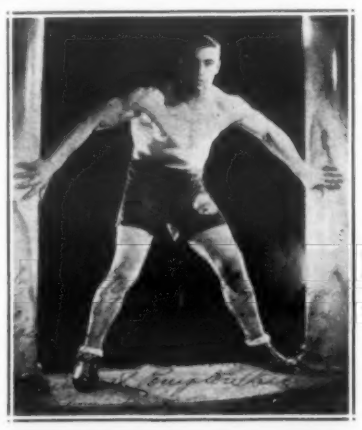
Two days she spent in Dallas, teaching salesmen of the Dallas Power & Light Co. how to sell G. E. kitchens, while in San Antonio she held a meeting for prospects at the salesroom of Mark Wright, Inc., distributor, and a session for employe instruction at the San Antonio Light & Power Co.

The new G. E. dealer in Laredo, Tex., Miss Nolan told us, sold more refrigerators in the three weeks after he took the franchise than the previous dealership sold during all of last year.

Four sales were made when she talked to 40 women in the showroom of John L. Martin of Austin, oldest dealer in Texas.

* * *

Biggest G-E User



Primo Carnera, new heavyweight boxing champion, used a G-E refrigerator in his training camp at Pompton Lake, N. Y. The unit was furnished by William P. Friend, sales agent for Heat & Cold Equipment Co. This concern is a dealer for Phil Harrison, Newark distributor of General Electric appliances.

High School Boys

"Eddie" also told us about serving on a very interesting committee of judges recently. She listened to six bright Cleveland high school boys make an oral presentation, "Why an electric refrigerator pays for itself," and helped decide which three deserved the cash prizes of $20, $10, and $5.

The prizes were put up by the Apex Electrical Mfg. Co., and R. J. STRITTMATTER, vice president in charge of sales of that company, was also one of the judges.

For 10 weeks before this event, some 60 boys from 16 Cleveland high schools had been in a training school conducted by "JACK" NORTH'S active Electrical League of Cleveland. Every Saturday they listened to lecturers from the league and from various electrical distributors and manufacturers in the city. Then they worked up their own presentations, went through elimination contests, and were pruned down to the six finalists whom Miss Nolan and Mr. Strittmatter heard.

* * *

The Ku Klux Klan Hisself, Yowzir!

ART SCAIFE, young red-head from the G-E appliance merchandising department who ranks second only to his boss, "MIKE" MAHONY, as a story-teller, has this one to report:

Down in Atlanta, Gawgya, Distributor DAN ALEXANDER and his new retail sales manager, huge WARDE STRINGHAM (former G-E distributor in Des Moines), were settling a few problems when in bustled a pert little fellow, puffing and blowing, and chewing vigorously on a cigar with a diameter big enough to plug the bunghole of a beer barrel.

"Where the so-and-so and so-and-so do you so-and-sos keep yourself, anyway?" he panted. "I've been looking all morning for you so-and-so so-and-sos."

Warde shifted his mammoth bulk a bit menacingly, and looked to Dan for permission to throw the so-and-so out.

Silent Dan let him get to his point.

"I've just had my first comfortable ride on a Pullman sleeper," he said. "It was cool as a cucumber, and so was I. They tell me that it was air conditioned. They also tell me you've got air conditioning. Very well. I want you to air condition my home. Put your so-and-so refrigerators in it, too. Send me the bill when you get through."

Handing them his card, he walked out. Warde was struck dumb, and Silent Dan was even mummer than usual. Their visitor was Imperial Kleagle Evans of the once-mighty Ku Klux Klans. And according to the finance companies, anything Evans wants, he should get. He can (and what's more important, *will*) pay for it and never miss the coin.

* * *

1934 Models

Driving through Bellevue, Ohio, on our way from Cleveland to Toledo the other day, we were arrested by this sign on a window:

1934 MODEL ELECTRIC REFRIGERATORS AT PRICES FAR BELOW 1933 MODELS

We backed into a parking stall by the curb, and walked inside the store upon which this sign was emblazoned. It proved to be the local office of the Lake Erie Power & Light Co. A red-headed girl, still in her teens, was the sole attendant.

"Yes," she answered, that General Electric refrigerator there in the window is a 1934 model. It's capacity is four cubic feet, and we'll deliver it to your home for $155. Here's another 1934 model over there. It has a capacity of seven cubic feet, and costs $199 complete. They're both the very best refrigerators money can buy."

Whereupon we looked with admiration. That answer was as concise and informative as any we'd ever heard from a small-town floor salesman. The two models, however, were not something out of the G. E. House of Magic being tried out *sub rosa* on the populace of this Ohio village. In that we were disappointed. They were simply model HX-47 and HX-70.

Also on the floor were Frigidaire and Westinghouse household refrigerators.

* * *

Frigidaire Classics

Frigidaire men are laughing about this yarn, told by A. G. Letherby, sales promotion manager for the Detroit district:

That getting what you want is simply a matter of chopping wood is the moral to a tale told by BOB GRIFFITH, Frigidaire household sales manager in Baltimore, and relayed to us by friends from Dayton headquarters.

When her husband refused to buy her a Frigidaire, a Baltimore housewive threatened to chop up their old ice box. One morning "friend hubby" was awakened by the sound of chopping wood. He descended to the cellar and found his wife diligently wielding an ax and reducing the ice box to chips.

Angered at the fulfillment of her threat, he kicked her on the shin. She retaliated by running outside and pitching a brick through the windshield of his automobile. Then she had him arrested.

The judge gave the husband his choice of paying the down payment on a Frigidaire and keeping up the monthly payments, or paying a fine for wife-beating.

He bought the Frigidaire.

S. C. Nowack, a household salesman, made a return visit to a home in which he recently installed a box.

"How is it working and are you satisfied?" Nowack asked the owner.

"Fine," the owner replied, "but you know that light you people put on the inside of the box."

"Yes," Nowack answered.

"Well, I don't like it. My wife took the light out and fixed it up with an alarm bell. Every time I open the door to pull a cool bottle from near the freezer, that darned bell rings and she comes running into the kitchen to catch me red-handed."

* * *

Add Gadgets

Since we scribbled at some length in this column on the electric worm charmer and mosquito trap, we've been receiving all sorts of gratis information and tall tales about other contraptions.

Another one of these new-fangled gewgaws is being exhibited at A Century of Progress exposition in Chicago.

It is a complete electric cow, indulging in all bovine maneouvres from chewing its cud, breathing, moving its head, and winking its eye, down to giving real milk. Copied after a real Holstein, the only difference is that the mechanical cow's "inards" are operated by cams and levers and an electric motor.

We also noticed that an electric goad for cattle and pigs is now available. The current from a 4-volt battery is utilized to energize a coil in a common hand torch. When the spring points at the end are depressed on the beast's hindquarters, the slight shock quickens its emotions and starts it on its way.

* * *

Poet's Corner

A. E. FRESHMAN, another G. E. district representation (BEN ALLEN was the first) with *virus poetica* in his veins, submits this contribution to the Poet's Corner:

Why do I smile said Mary Lee?
Well you would smile if you were me
I'm all dressed up and ready to go
And look so pretty from tip to toe.

But why the smiles said hubby John
Who'll wash the dishes while we are gone?
Let's get it over and then we'll go
And see the latest picture show.

Said Mary Lee with eyes so bright
For ten long years I've looked a fright
For ten long years, three times a day
I've washed these dishes and put them away.

For ten long years since we've been wed
We've struggled and strived to get ahead
For ten long years I've done my best
And from those dishes I now can rest.

The kitchen you know said Mary Lee
Claimed most of the time of little me
I could not look nice and be happy too
For after I'd cooked I was not thru.

There stood in a pile in sad array
Those messy old dishes who seemed to say
Arise fair maiden with hands so red
They'll stay like that till you are dead.

And now I smile said Mary Lee
Thanks to the brains of the great G-E
For there in my kitchen I've got my wish
A perfect machine to wash every dish.

And before I forget I want to say
That cutlery and glass have had their day
For they with the dishes so quick and bright
Are ready for use both day and night.

So why not smile said Mary Lee
From my last chore why now I'm free
My hands are white, my dress is clean
I'm always ready to be seen.

—A. E. FRESHMAN.

INDUSTRY CODE MADE BY DRY GOODS GROUP

NEW YORK CITY—A code which provides for minimum wages of $10 to $18 a week for experienced employes, drafted here last week by the Retail Dry Goods Association, has been approved by the association's board of directors and is being submitted for approval and comment to approximately 4,000 member department stores, mail order houses, and specialty shops.

That the code is tentative and has not yet been sent to Administrator General Hugh Johnson in Washington was the statement of Lew Hahn, president of the association.

Minimum wages are based on a 48-hour week, and are $12 to $18 for experienced men workers and $10 to $12 for experienced women workers, varying with the population in the territory a store serves.

For "junior workers" (defined as those under 18, with less than one year's experience, working outside city areas) a minimum of $9 has been proposed. In metropolitan districts, the rates for these workers are raised to $10 or $11.

Other sections of the code give employes the right to bargain collectively; condemn misrepresentation of merchandise and criticism of competitors' goods or selling prices; specify a minimum mark-up of 10 per cent on merchandise; and prohibit sale by member companies of products manufactured in penal institutions.

The association hopes that the code, in its final form, will be representative of the whole retail merchandising trade.

3,608 PROSPECTS LISTED AT NEWARK BUREAU SHOW

NEWARK—The 12 spring refrigeration shows held in New Jersey in the area served by the Public Service Electric & Gas Co. registered a total attendance of 71,000, according to officials of the company. A total of 273 direct sales were made and 3,608 prospects were obtained.

In addition to these 12 shows, Public Service participated, with other local dealers, in the "Own Your Home" show in Elizabeth, which was attended by more than 100,000 people.

Living Costs Increase .8% in May

NEW YORK CITY—Living costs for the month of May were 0.8 per cent higher than those in April, according to the National Industrial Conference board monthly index, compiled from data secured in 172 representative cities.

With the 1923 dollar being used as 100, or standard, purchasing power of the dollar in May was 138.7, a drop from the value of 139.9 obtaining in April.

Food costs were 3.6 per cent higher in May, while rentals decreased 0.8 per cent in that month. Clothing prices remained stable. A slight rise in the "sundries" index was attributed to price increases in furniture and house furnishings.

30,000 VISIT NEW ORLEANS MODEL HOME

NEW ORLEANS—More than 30,000 people visited the New Era Home sponsored by the Electrical League here during the first six weeks the house was open, and it was estimated that fully 50,000 would pass through its doors by the closing date, June 30, according to league officials.

This home, a new house of Spanish design located at 2112 Napoleon Ave., is equipped with every modern electrical device and is fully furnished.

In the basement is an exhibit of 12 makes of refrigerators, sponsored by the New Orleans Food Preservation Association.

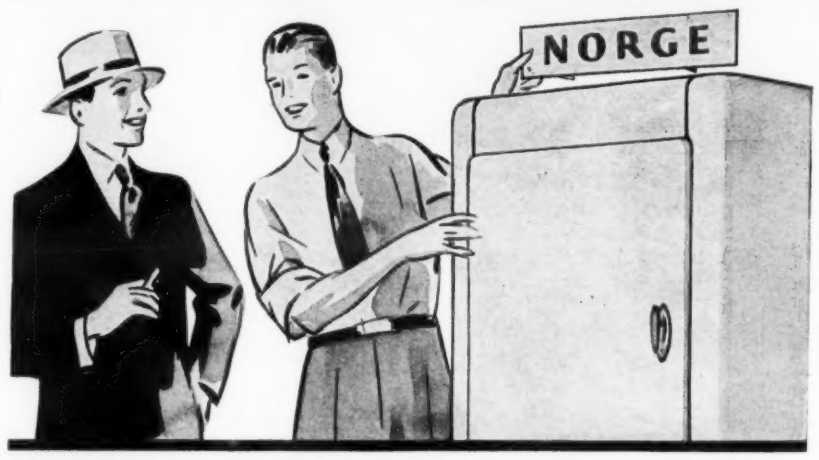
HADLEY DIRECTS COLUMBIA PHONOGRAPH ADVERTISING

CHICAGO—Earl L. Hadley, advertising manager of the Grigsby-Grunow Co., will also direct advertising of the Columbia Phonograph Co. from the Chicago office of the parent organization, according to an announcement by John F. Ditzell, assistant vice president and general sales manager of Grigsby-Grunow Co., and president of Columbia.

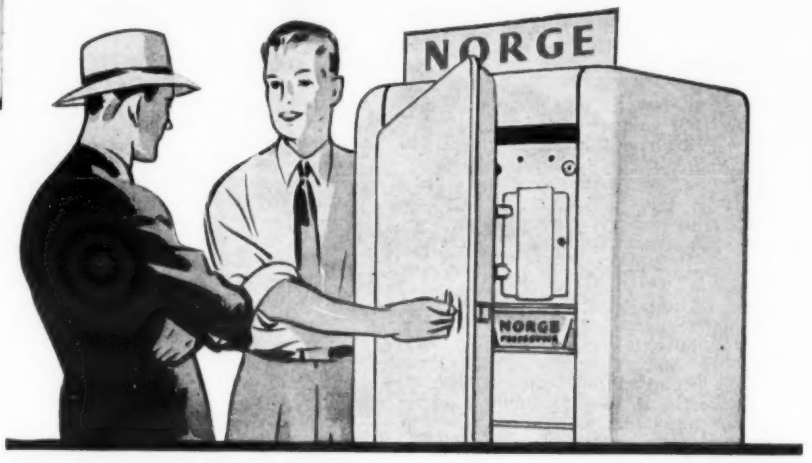
R. H. MACY & CO. TO SELL ONLY LEONARDS

NEW YORK CITY—R. H. Macy & Co., department store here which is known for its strictly cash basis of selling, will merchandise Leonard electric refrigerators exclusively in the future, according to Russell E. Hunting, manager of the refrigeration division of E. B. Latham & Co., Leonard distributor in this district.

Used EVERY DAY... NORGE sells EVERY DAY



"Well, your Norge season's about over?"
"Not by a darn sight! We've just had the biggest SEASON ever... but we're going right on selling 'em every day."



"How can you do that, when all the other dealers are getting ready to close out their stock until next spring?"
"That's simple. A couple of years ago we'd have done the same thing but we know better now. Norge proved to us that you can sell refrigerators every month in the year if you want to... and that's what we're doing. The profit on a Norge is just as good in July or August as in May!"

"But why do people buy from you OUT OF SEASON... when they don't buy from other dealers?"
"What do you mean... OUT OF SEASON? Don't they use their refrigerators every day of the year? Then why should they only buy in the spring? No sir! They'll buy any time if you've got the best... and show it to them. Rollator Refrigeration... with the only genuine Rollator mechanism... with the finest and most beautiful cabinet in the world... priced right... and backed up by a common sense year 'round sales program, inspires consumer confidence and widespread, day-in and day-out acceptance."

Steadily mounting sales are the actual experience of the thousands of Norge dealers.

Why?

Rollator Refrigeration is a proven product. Its exclusive cooling mechanism has been soundly merchandised and has, as a product, won the confidence of hundreds of thousands of users in over eight years of use.

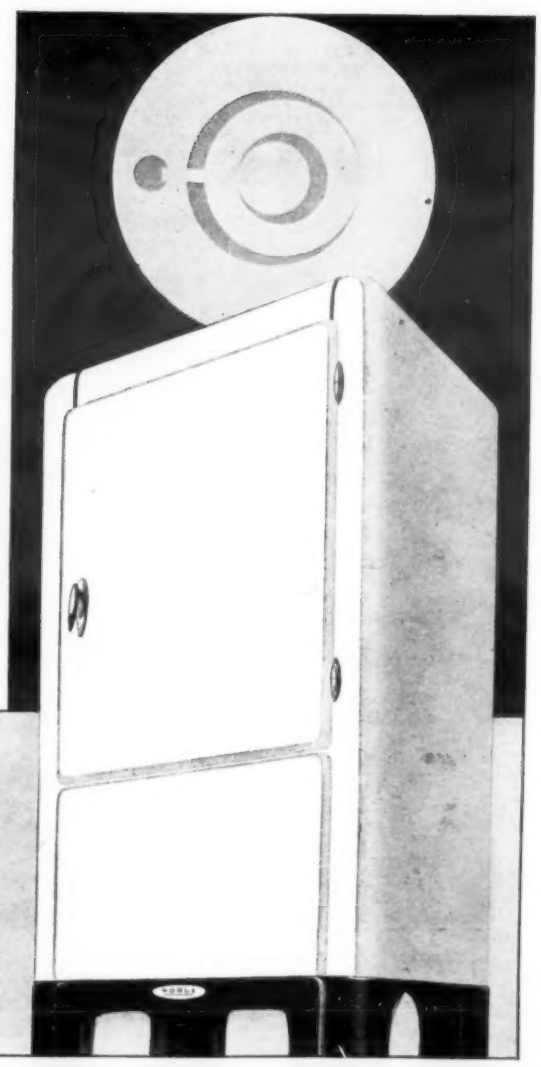
Widespread consumer acceptance has made Norge a non-seasonable product with a steady, *dependable* volume of sales, day after day, month after month.

Norge offers responsible and progressive dealers a generous profit and an unfailing source of profit... both ways from January to July.

The present business upswing means only one thing—more Norge sales this summer than ever before.

Prices are still the lowest in Norge history ...July means an opportunity for extra sales to those who are buying now to beat the price climb.

Ask, by 'phone, wire or letter, about the Norge *non-seasonal* dealer plan.



NORGE CORPORATION; DIVISION OF BORG-WARNER CORPORATION, 658 E. WOODBRIDGE ST., DETROIT, MICH.

NORGE

Rollator refrigeration

Daily Describes Advertising Manager's Job; Leavenworth Tells How New Air Conditioner Was Marketed

(*Continued from Page 1, Column 3*)
time or attention to the advertising end. Concern about his company's advertising will often result in a sales manager's failing to take care of his own work properly.

"It would pay the average company to employ a good man to handle the advertising—and by a 'good man' I mean someone who really understands advertising and all its problems—not just the president's son-in-law, who probably hasn't the vaguest idea that advertising is actually a mighty complicated, difficult business," Mr. Daily said.

"Too many of us advertising men don't believe in advertising. We're experts with someone else' millions, but if we had to use our own money, we wouldn't do a bit of advertising.

Healthy Respect Necessary

"Until we get a good healthy respect for advertising and what it can do, until we put it where it belongs, until we get it recognized as a business that requires a lot of study and hard work, it will be kicked around by incompetents, and there will be more than one instance of an executive rejecting ads because his 13-year-old daughter doesn't like them."

Everybody, the General Electric man said, has an idea that he is an advertising expert, and thinks he knows all about the business just because he can look at an advertisement and point out parts he doesn't like. There is a lot of difference between making up one advertisement and laying out a whole campaign, he added.

Three Related Subjects

Mr. Daily pointed out that advertising, sales promotion, and publicity are really three separate forces, despite the fact that they are all used together to make a market for a product.

"Advertising is salesmanship in print," he said. "Sales promotion is the same thing, or it may be word-of-mouth salesmanship, but it talks to *individuals*. Publicity gets an idea or a product *talked about*, but it doesn't sell."

He then explained to the executives present how the G.E.-Warner Bros. train which crossed the continent in February and March combined these three selling forces.

"The advertising part was the space we and our distributors paid for to announce the train's visits in newspapers. The sales promotion job was done by the movie stars' radio talks during the trip and by the salesmen we had in the train's G.E. kitchen to explain its features to visitors.

Know About All Three

"The train secured real publicity because it got our products talked about. The transcontinental tour was like any other well-planned advertising campaign, because it used all three forces.

"A good advertising man should know a lot about all three of these forces, but in a large company, there should be a specialist in each field working under the manager, if campaigns are to be carried out with a maximum of effectiveness."

One of the things sales and advertising executives must know more about is why people do and don't buy certain products, was another of Mr. Daily's statements.

"I for one don't believe that 80 per cent of the women do all the buying, as it is sometimes said. The *Redbook* story is good—'The shadow of a man stands behind every woman who buys.' The woman may actually spend the money, but it is the *determination* of the sale that counts. We (G.E.) have found that men determine more than 50 per cent of our sales."

In conclusion, Mr. Daily said, "Now is our (sales and advertising executives) chance to show what we can do. We are stepping into a new market. People aren't going to continue to go around with patches on their pants, and driving cars with fenders that would fall off in a stiff breeze. This is the time for us to show how properly coordinated sales and advertising effort can produce results."

LEAVENWORTH DESCRIBES MARKET DEVELOPMENT

Another speaker at the sales executives' meeting was Ralph Leavenworth, general advertising manager of the Westinghouse Electric & Mfg. Co., who explained the steps his company is taking in developing a market for commercial air conditioning.

At the outset, Mr. Leavenworth said some of the publicity given air conditioning is loose talk, bordering on ballyhoo, and is rather to be deplored.

"Air conditioning," he said, "will attract a multitude of manufacturers whose only knowledge of air is that it is something we breathe, and that by heating it in the winter time, we make our houses and other indoor places livable if not exactly comfortable.

Technical Subject

"Air conditioning is a highly technical subject from an engineering standpoint, a complicated and difficult one from a manufacturing standpoint, and an expensive, long-pull operation from a marketing standpoint.

"It is no business for pikers, nor even for the sincere, reasonably well-established company which is not prepared to put in plenty of time and money for development of product and market."

Mr. Leavenworth said that in his opinion, the statement that there is a five-billion-dollar potential market for air conditioning is not exaggerated if one includes in this market most of our residences and apartments and about 100 per cent of our commercial buildings.

Commercial Market

The Westinghouse company, he continued, is at present concentrating on commercial sales because in such cases, air conditioning can be sold as a sound economical investment rather than as a luxury.

"Today, air conditioning's greatest appeal lies in the relief of discomfort from excessive heat and humidity," Mr. Leavenworth said. "People generally are not yet educated to the advantages and desirability of air conditioning the year 'round.

"It is therefore logical that present-day markets be discussed from the viewpoint of placing more emphasis upon hot weather relief than upon the advantages of air conditioning the year 'round."

After mentioning types of commercial establishments which should offer an immediate market for air conditioning, the Westinghouse advertising manager took up a discussion of what qualifications a good air-conditioning dealer should have.

"The right kind of dealer must be that rare bird with an organization that combines high-class salesmanship with specialized engineering resources. He must also know the trade regulations of his locality, because the installation of this equipment requires a knowledge and practice of building construction, plumbing, and electricity. In addition to these requirements, he must be equipped with a competent service department.

Must Make Dealers

"An ideal air-conditioning dealer has not been born, but must be made. He may have a good sales force or a good engineering staff, but it is more than likely that neither of these two departments has ever had much experience with unit air-conditioning equipment," Mr. Leavenworth said.

"It then devolves upon the manufacturer to provide training for his dealers, not only in the sale of equipment, but in all the different phases of engineering and service. Dealer training, in the sale of this type of equipment, becomes one of the most important phases in the development of markets."

Prepare Portfolio

Westinghouse' first step in development of the commercial air-conditioning market, said Mr. Leavenworth, was the preparation of a complete portfolio containing all details of the company's sales plan. This information is for the use of field salesmen, who in turn pass it on to dealers.

This portfolio outlines the market for unit air conditioning, describes the product thoroughly, talks about the manufacturer and his qualifications, gives the company's plans for national and local advertising, and contains a complete training course for dealers, salesmen, and engineers.

Citing the great pains used by his company in preparing this portfolio, and the study given the plan before it was completed, Mr. Leavenworth concluded, "Serious and expensive mistakes would almost surely be made unless a thorough and carefully thought-out plan were placed in dealers' hands at the start."

Develops Market

RALPH LEAVENWORTH
Westinghouse advertising manager describes the development of a market for air conditioning.

DAILY EXPLAINS HOW NATIONAL CAMPAIGN IS PLANNED

On Wednesday morning, Walter Daily made another address—this time at the conference of retail advertisers—his subject being "What We Think of in Planning a National Advertising Campaign."

Mr. Daily's talk was of special interest to the retailers at this session, as it came immediately after a talk by Miss Mary Murphy of the Kern department store of Detroit in which she charged that "national advertising is not harnessed closely enough to retail outlets and their work . . . that retailers deserve more financial assistance from manufacturers for advertising."

Problem of Salesman

When the G.E. specialty appliance sales department plans a national campaign, Mr. Daily said, it gives first and greatest consideration to the problems of the retail salesman, as the great burden of specialty selling rests on his shoulders.

"We try to determine what appeals our national advertising should have by meeting with salesmen, dealers, and distributors, and by going out and talking to appliance prospects.

"We have found direct-mail advertising to be especially effective, because it carries a message straight to those prospects which our retail salesmen are contacting."

To Miss Murphy's statement that national advertising is too general to do much good toward increasing sales for retail stores, Mr. Daily replied, "Without prestige-building national advertising, we wouldn't get very far. It builds a real public acceptance for a product.

"The national advertiser *does* consider the problems of the local advertiser, but these problems differ so widely that the national campaign must be fairly general. It is impossible to prepare displays for every locality; the cost would be prohibitive."

Dealers Thwart Plans

Mr. Daily said that oftentimes dealers themselves thwart the national advertiser's attempts to prepare copy that will have the greatest possible local appeal. "We try to find out what the dealers want, but a lot of them won't even answer our letters."

The manufacturer has to be general, too, in his literature and his billboard advertising, he stated. The best he can do to localize such advertising is to leave a blank space where the dealer may insert his own message to a particular community.

But these messages are quite often very inferior, because the average dealer knows little about advertising, and is seldom able to prepare an effective insert for such advertising, he said.

Charge on Dealer Material

As to whether the manufacturer should furnish various advertising materials to dealers free of charge, Mr. Daily said, "The manufacturer can't stand much more expense than he already has.

"And, when retailers are obliged to pay for a part of their advertising materials, they'll be far more conservative in deciding *what* and *how much* to use. If the matter were furnished free of charge to dealers, many of them would order great loads of stuff, then leave most of it unused on their shelves."

QUINN SAYS ADVERTISING JOB IS TO CREATE NEW DESIRES

T. K. Quinn, vice president of the General Electric Co., made an address at the last general session of the advertisers immediately after a luncheon. His subject was, "Raising the Level of Wants," and he began by saying that distribution means far more than an automatic "parceling out" of goods.

"It is one thing merely to supply what people think they want and quite another to make them want it, and then to go beyond the frontier and teach them to want better and more abundant living. This is the job of advertising at its best," he asserted.

Better Living Standards

"The question of national prosperity is not bound up in the single proposition of whether the consumer's needs and wants are supplied at the cheapest possible money price.

"What is actually more important is that the producer and his employes and all those who contribute to the production, sale, and distribution of goods be rewarded in proportion to their contributions, and at rates which will enable them to enjoy the better living standards at hand."

Stating that before we can reach the real business possibilities of this country, we must somehow fill the needs and wants of all individuals for protection against old age, disability, unemployment, and death, Mr. Quinn said:

"As long as the worthy individual must live in fear of these things, he will feel obliged to hoard and restrain his purchasing power. Those of us who have something to sell want better, healthier, and wealthier customers. The golden rule applied to others is not only morally right, but in the larger view is decidedly good business."

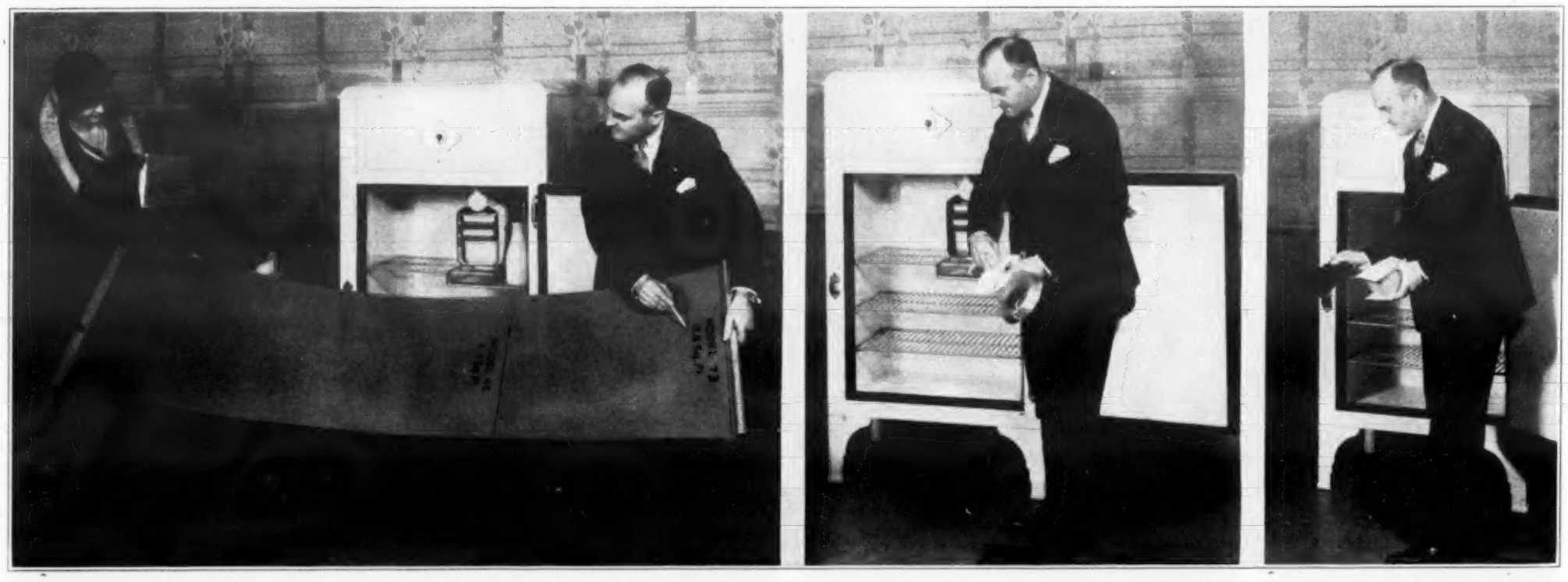
Creating Wants

On the subject of creating wants, Mr. Quinn said this: "The notion that the consumer knows what he wants and should have without the influence of selling and advertising is quite mistaken. It assumes that everyone knows what everyone else knows."

Continuing, he said, "Making purchasing power possible will not alone turn the trick. The law doesn't propose to make men work. It is to be expected that they will work for enough to supply actual needs, but

(*Concluded on Page 5, Column 1*)

Westinghouse Dramatizes Its Sales Demonstration to Prospects



A Westinghouse refrigeration salesman demonstrates three of the steps in the use of the "dramatic demonstration kit," latest of the many sales helps developed for Westinghouse dealers and salesmen. At the left, the salesman spreads out a roll which gives the prospect a visual demonstration of the shelf area contained in the various Westinghouse cabinets. In the center the salesman burns a match under a metal frying pan, after which he repeats this performance with a china plate, to demonstrate the superiority of porcelain (as used in the Westinghouse froster) over rough metals for cleaning purposes. At the right, Mrs. Prospect is shown an actual Westinghouse cabinet wall construction, the salesman placing pieces of insulation, inside porcelain wall and exterior steel and porcelain together to show the prospect how the refrigerator is constructed.

Kettering Jibes Advertisers, Then Tells Of Relationship with Research

(*Concluded from Page 4, Column 5*)

whether we are to go beyond mere necessities depends upon wants.

"The law doesn't attempt to make people want things. That is a sales job. Not only are wants and needs in constant competition with each other, but almost every individual need competes with every other individual need and want, and every individual want competes with practically every want and need.

"As long as choices are left to us, the way for advertising and selling is left open, however many laws are passed. The work of creating and raising the level of wants is an added great opportunity."

Mentioning his company's advertising, the G.E. vice president said, in conclusion: "We advertise because it has proved to us to be economical, good business—because it is inexpensive salesmanship. We advertise because we have ideas to sell—because we have products to sell—because we have goodwill to maintain."

KETTERING CRITICIZES ADVERTISING

Visiting advertisers who had never heard an address by Charles F. Kettering, president of General Motors Research Corp., got a side-splitting surprise out of his talk at the last general session.

People confessed afterward that they had expected an altogether serious dissertation from the "General Motors genius" in "Research—Partner of Advertising," which was Mr. Kettering's subject. What they actually heard was a jocular lambasting of advertising in general. Not until he was well into his time did Mr. Kettering become genuinely serious and talk about his subject.

Language of Customers

The audience roared with laughter when Mr. Kettering made this first remark: "I haven't any idea why you folks wanted me to talk here. I'm a research man, and a research man works with facts. I didn't know advertising men wanted facts. They usually cramp an advertising man's style."

Then he went on to say this:

"A lot of times, advertisements don't use the language of customers, and that is important. Here's an example of how important it is to use language that everyone understands:

"Not long ago I was walking around the World's Fair grounds, trying to learn something. I stopped at an exhibit of a machine (which I'd helped design), and asked a young man there to explain it to me.

"He started in using big technical words, and when I asked what they meant, he'd use still more explaining them to me. Finally I walked away and asked the manager of the exhibit whether he was paying the young fellow to explain that machine, or whether the young man was paying the exhibitor.

"Later, I figured that that exhibit was a total loss. Ninety-seven per cent of the people on the grounds wouldn't understand the explanation, and the 3 per cent that would understand it know it already. A lot of advertising is just like that exhibit. It *ought* to use language that fits in with folks' surroundings and habits.

"Advertising is the second greatest educational system in the world," he said. "Schools and colleges are first—probably—judging from what I've been told by some new college graduates recently."

Overexpenditure for Advertising

Mr. Kettering said it irks him occasionally when a company wants to spend so much *advertising* a product that there's no money left to *make* it. "Sometimes I think a company ought to add the manufacture of a product to the cost of advertising and distributing it—then divide by two and give the product an even break with the conversation."

As a comment upon modern business methods in general, the speaker said, "Business has got so complicated that by the time you've got all the forms made out nowadays, there's no time left to market the product."

People Shut Radios Off

Then back to the subject of advertising:

"Advertising men ought to study how far the human nervous system will stand advertising," Mr. Kettering said. "You've succeeded in making most people shut off their radios—there got to be so much ad broadcasting that there wasn't any time left for programs. You ought to do some advertising *against* advertising to get folks to believing it again.

"Get back your radio listeners. Properly used, the radio would be fine for advertising. You just overworked a new thing, that's all.

"You've got your billboards so no one can read them if he drives along at a fair speed. Most of the ads are in seven colors and four kinds of type, and there isn't a pair of eyes anywhere that could take all that in at a glance."

Progress in Research

After this remark, Mr. Kettering began talking about his subject—and seriously, too. Following are some of his statements:

"In research in advertising, you're making great progress," he told the advertising men. "You're learning how to be distinctive—how to make yourselves stand out.

"Very few people know much about anything but their own businesses. Your greatest problem is that of making your advertising mean more to people.

"Your business and the research business are a partnership. This world is as far from being finished now as it was when it was started. We have to consolidate and advance; no job is more than one-half done. Research men will isolate facts—then it is your job to tell the public about them.

"Today, we're entering a new period, and it will take a long time to educate the public to the new things we're finding out. The public has a hard time getting away from old habits. For instance, we still put windows in our buildings, and then hang up heavy curtains so we can't see out. We have windows now—not because we need them—but just because people have been putting them in buildings for years and years.

Find New Things

"It's up to research and advertising to find new things, and sell them," he said. "We have to keep business on an incline. We've got to keep after the people who have money.

"When we can make the people with a lot of money buy the *very newest* things we've found and made, the money they spend will soon get into the hands of laborers and other folks who don't have a lot of money. Then those people will buy something that's been on the market quite awhile—something they've been wanting a long time—and the result will be that general business will keep on an upward trend.

"Let's work to make people buy on impulse—make them buy even if they're not quite sure *why* they want a certain thing. People don't always like to have to justify a purchase, anyhow. And it's good for general business if they just buy, regardless of the reason.

"If I had to fill out one of these newfangled requisitions for each machine I want for my laboratory, I never would buy anything, because I can't put down on paper just how much money that machine will make for my company. I just know that I want it, that's all; I have a buying impulse.

"Let's work to give other people that same feeling. It will be one of the jobs of research and advertising—and if we succeed in doing it, we'll be doing a lot to push this world ahead."

JOHNSON'S MESSAGE TO ADVERTISERS

After the reading of President Roosevelt's message to the advertising association at the opening of the convention, another letter from General Hugh S. Johnson, administrator of the National Industrial Recovery Act, was read. Its text follows:

"The interest of advertising men and women in the industrial recovery act is a source of encouragement to those of us who are charged with the responsibility of putting its provisions into effect . . .

"Advertising is certain to be an important factor in the new industrial relationship established under the terms of the act. In its effects, the law will bring to the fore the sales problems of the manufacturer and will emphasize the importance of an accurate knowledge of his markets.

"I believe, too, that research in industry will enjoy even greater importance under the provisions of the law. Good advertising will become more essential than ever. It will be in a position to help the business executive avoid those wasteful and expensive practices in selling which so often add needless costs to needed products.

"Good advertising is opposed to senseless price cutting and to unfair competition. These are two business evils which we hope to reduce under the new plan of business administration.

"Constructive selling competition will be as strong as ever and there will be great need for aggressive sales and advertising efforts. The only kind of competition that is going to be lessened is the destructive, cut-throat kind of competition which harms industry and the public as well.

"There should be more competition than ever in presenting quality products to consumers and in selling those products. What we are going to need more than ever is energetic, intelligent, honest efforts to sell goods to people who are to use them.

"No one group can achieve the results sought under this new law. We all must work together. Advertising must help business and the government alike to bring about the new order of things as quickly as possible. In doing this, of course, we will be helping to bring trade back to normal volume. Above all, we shall be working toward the re-employment of millions of our fellow Americans.

"If there is one job for advertising men and women to carry through at this moment, it is to study the implications and effects of the Industrial Recovery Act and then to apply their skill in assisting business to gain fully from the planned results of the law."

TRADE ASSOCIATIONS CAN SPEED RECOVERY UNDER CONTROL LAW

NEW YORK CITY—That trade associations, as the medium through which the National Industrial Recovery act will function, can do much to hasten business recovery and rehabilitate purchasing power is brought out by Roscoe C. Edlund, president, American Trade Association Executives, in an article entitled "The New Challenge to the Trade Association," appearing in Metropolitan Life Insurance Co.'s Executives Service Bulletin for June, 1933.

"I believe that the accomplishment of these ends will be simplified by the passage of the recovery act, but it can only be realized through hearty cooperation within industries," says Mr. Edlund. "The trade association is recognized as the medium through which industrial planning in America may attain its vital objectives."

Pointing out that activities of trade associations already include scientific and technical research, cooperative marketing development, establishment of standards, arbitration, legislation, credit and transportation regulation, promotion of foreign commerce, and the improvement of business practices by such means as codes of ethics, Mr. Edlund believes their functions have been greatly broadened by passage of the recovery bill.

"The country will look to them as custodians, working in the interest not only of their respective trades and industries," he states, "but also for the protection of the worker as well as of the consumer and the general public."

Certain facts about an industry must be thoroughly understood by that industry before any such cooperative planning movement through an association can be a success, according to Mr. Edlund. To bring out this information, he lists seven questions which a business can ask itself. He confines his questions to points of employment, hours, and wages, stating that regulation of competition, though vital, is of less importance than these three starting points.

Going on to the subject of competition, Mr. Edlund states that some sort of cooperative regulation to conserve the best interests of an industry will undoubtedly be a function of most trade associations as soon as employment has been taken care of.

"The new partnership of government and business," he concludes, "will succeed to the extent that individual companies and industrial groups give to it enlightened, unqualified cooperation."

"Some questions an industry might ask itself:

"1. What number of hours per week for individual employes should we come to in our industry? Or perhaps (*since any given worker should not necessarily work every week, or the same number of hours in every week*) what should be the maximum number of hours per worker over a period of three or six months?

"2. What minimum wage *per week* should be paid to anyone who is working? Should this minimum wage differ according to locality?

"3. How many additional workers, both in number and percentage, to those now employed would be added to our payroll if we went to an equivalent of a 30-hour week? How many if we went to an equivalent of a 32-hour week? A 36-hour week? A 40-hour week? (*The thought prevailing at Washington will probably limit us not to exceed 40 hours—more likely not to exceed 36 hours. As a matter of fact, 30 or 32 hours seems to be mainly in mind at Washington.*)

"4. What will be the additional cost to us to manufacture what we will term basic a, b, c, or d grades, based upon a minimum wage with a maximum number of hours per week? (*In thinking of minimum wage, probably common labor should govern, but thought should also be given to different grades of labor, such as skilled labor, machine attendants, etc.*)

"5. What, in detail, are the costs of making products of these major basic grades? Or, perhaps, what are the spreads in detail, between material costs and the finished product? How, in detail, will these costs be changed by changes in working hours and wages?

"6. What, in detail, are the costs of distribution, from the factory out? In all the thinking that has been done, it looks as though industry will have a chance, if it cares to do so, to name basic prices of basic grades of goods. Do we wish to do this?

"7. Would pledges to employ a specified number of additional workers over a period of three to six months require some agreement in the industry as to limitation of production? If so, along what lines and in what manner should this limitation of production be arrived at?"

The LOOK SHELVADOR

U. S. PATENT 1898922

An Electric Refrigerator with Shelves in the door for eggs, butter, bacon, and other small articles

$89.50 DELIVERED INSTALLED ONE YEAR FREE SERVICE

An exclusive patented feature found only in the New

CROSLEY Electric REFRIGERATOR

Just open the door . . . and THERE it is! Here in a nutshell you have the newest and most important improvement in refrigerator cabinet design since the invention of the ice box. Now . . . no more reaching . . . no more searching for the little things that, in ordinary refrigerators, are so hard to find! No more disarranging of everything . . . no more sleeves dragged through butter . . . no more foods leaking through the shelves. Think of the time saved . . . think of the increased "usable" capacity of the New Crosley Electric Refrigerators with Shelvador. Shelvador actually gives the Crosley Electric Refrigerators greater capacity than their ratings indicate by increasing their "usable" capacity. Try to put everything that goes into Shelvador on the shelves of an ordinary refrigerator, and you'll be amazed. An orange takes as much "shelf room" in the ordinary refrigerator as a bottle of milk. In the Shelvador it takes only the space of an orange.

Only Crosley Electric Refrigerators can use the Shelvador, for it is an exclusive patented Crosley feature. For anyone to buy a refrigerator without Shelvador is to deny himself a great convenience and time saver as well as to buy something already outdated. When people see it they quickly realize that they ought to replace their present refrigerator.

The added convenience of Shelvador costs nothing. Even if the New Crosley Electric Refrigerators did not have this feature, they would still be the world's outstanding refrigerator values at the new low prices. With Shelvador, Crosley Electric Refrigerators go so far beyond ordinary values that there is nothing with which to compare them. They are famous for trouble-free operation, quietness and convenience.

Three sizes to meet every home requirement . . . each size with more "usable" space because of Shelvador. And remember . . . insulation is not sacrificed in the Shelvador . . . the exterior of the door is extended to permit the use of a standard thickness of insulation.

See your Crosley distributor. Examine the Shelvador. Instantly you will see its advantages. Instantly you will realize why the New Crosley Electric Refrigerators are sweeping competition before them.

Model D-35
(*Illustrated above*)
3½ cubic feet NET capacity; 8 square feet of shelf space. (N. E. M. A. rating.) Has two ice trays, each tray with a capacity of 21 ice cubes—42 cubes in all. Additional space provided for an extra single tray or double depth tray. 3 inches of insulation at top, sides, bottom and door. Dimensions: 50⅝" high, 23⅞" wide, 24" deep.

Model D-45
(*Not illustrated*)
4½ cubic feet NET capacity; 10.6 square feet of shelf space. (N. E. M. A. rating.) Has three ice trays, each tray with a capacity of 21 cubes, 63 cubes in all. Additional space provided for an extra single tray or double depth tray. 3 inches of insulation at top, sides, bottom and door. Dimensions: 56⅛" high, 23⅛" wide, 24" deep . . . **$99.50**

Model D-60
(*Not illustrated*)
6 cubic feet NET capacity; 11.5 square feet of shelf space. (N. E. M. A. rating.) Has three standard size ice trays, each tray with a capacity of 21 ice cubes, 63 cubes in all, and one double depth tray, which is very desirable for freezing desserts. 3½ inches of insulation at top, sides, bottom and door. Dimensions: 57⅛" high, 29⅛" wide, 25⅜" deep. **$130.00**

Remember the inside of the Shelvador is recessed to provide for the shelves. The exterior of the door is bulged outward actually improving the appearance of the refrigerator and providing space for even more insulation than in ordinary doors.

ALL PRICES INCLUDE DELIVERY..INSTALLATION..ONE YEAR FREE SERVICE

Montana, Wyoming, Colorado, New Mexico and west, prices slightly higher

The Crosley Radio Corporation - Cincinnati
POWEL CROSLEY, Jr., *President.* Home of "*the Nation's Station*"—WLW

CROSLEY Electric REFRIGERATOR WITH SHELVADOR

ENGINEERING

Air Conditioning, Thermal Problems, & Current Problems Studied by Refrigeration Engineers

(*Concluded from Page 1, Column 4*)

held in New York during the first week in December.

Monday afternoon's meeting, first of the technical sessions, was devoted to the general topic "Current Problems," and included talks by H. C. Guild of Pittsburgh, C. T. Baker of Atlanta, Prof. H. J. Macintire and Gene Edwards of Urbana, Ill., Dr. J. C. Goosman of New York City, and Dr. L. Nathan of Zurich, Switzerland.

Guild Discusses Condensers

Mr. Guild discussed "The Evolution of Condenser Design," telling of some of the technical problems which were overcome in developing modern condensers for commercial and industrial refrigeration plants. Mr. Guild is a consulting engineer for H. M. Byers, Inc., Pittsburgh manufacturer of metal used to fabricate condensers.

Average life of these large water-cooled condensers is now only from four to five years, he said, although by proper design, choice of materials, and treatment of water when necessary, the life can usually be extended to about ten years.

One of the chief enemies of condenser tubing is carbonic acid gas which is formed by CO_2 and water. This condition can be remedied, he said, by turning the condenser on end, and making some provision to vent the gas.

Another difficulty with which condenser designers have been struggling is the removal of non-condensable gases which cool, shrink, and settle down on the surface of the condensed refrigerant, covering it with a film and impeding the operation of the condenser.

When Mr. Guild had finished, A. R. Stevenson of General Electric Co., inquired about condensers which will probably be used with air-conditioning systems installed in the basements of residences. He wondered particularly whether evaporation from a surface condenser installed in the basement would be objectionable.

Mr. Guild thought that such equipment would introduce considerable humidity into the air, and that air in the basement would become sufficiently saturated to affect the cooling effect materially.

Natural Gas Engines

Mr. Baker, who has spent a number of years designing ice plants with natural gas engine drives, presented a paper in which he described several installations of these prime movers in southern state ice plants, and placed special emphasis upon the economy features of this type of equipment.

Over a three-year period in one plant where natural gas engines are now in use, said Mr. Baker, the yearly power cost per ton of ice averaged from 81 to 82 cents per ton on an average load factor of 60 per cent, when electric power was used.

During the six-month period from October, 1932, to March, 1933—after natural gas engines had been installed—the average power cost per ton was 64 cents, wtih a 35 per cent load factor. This compared, he said, with an average power cost per ton of $1.09 for the same period of the preceding year, with a 53 per cent load factor.

In plant No. 2, with a 20-ton daily capacity, installation of natural gas engine equipment effected a saving of $2,213.52 in seven months as compared with the cost when electricity was used, according to the speaker.

As a third example of natural gas engine installations, Mr. Baker described one in an Oklahoma ice plant, and gave power cost figures for April and May of 1931 in that plant.

"In April of that year," he said, "1,586 tons of ice were produced with a gas consumption of 753 ft. per ton. In May the plant produced a total of 1,733 tons, consuming 743 ft. per ton. The average cost for power for these two months, including compressor and auxiliary power, was 11.22 cents per ton."

Mathematical Data

Mr. Edwards, a graduate student at the University of Illinois, was introduced by Prof. Macintire, under whose supervision he had compiled the mathematical data presented in his paper, "Pressure Losses of One Fluid as a Criterion of the Pressure Losses of Any Fluid."

Dr. Nathan's paper on "A Modern System of Beer Production" was presented jointly by Dr. Nathan and Dr. Goosman, and is reported more fully on page 17 of this issue of the NEWS.

All of Tuesday morning's session and one paper Tuesday afternoon were devoted to the subject of air conditioning, with papers on both theoretical and design aspects. Glenn Muffly presided over the morning meeting.

Residence Cooling Research

First paper was entitled, "The Residence Cooling Problem—Aspects as Developed by Tests in the Research Residence at the University of Illinois." The paper was prepared by Prof. A. C. Willard, head of the department of mechanical engineering and Prof. A. P. Kratz of the same department. Because of the absence of these men, the paper was presented by Prof. Macintire.

This residence, the scene of several research programs conducted in cooperation with the American Society of Heating and Ventilating Engineers and the National Warm Air Heating Association, is a frame house in Urbana. Last summer it was provided with an air-cooling system using ice, and an extensive series of tests run to determine:

1. The character of the cooling load as affected by the heat lag of the building and the outdoor-indoor temperature difference.
2. The variability of the cooling load from season to season as illustrated by weather data from three localities.
3. The possibility of reducing the cost of residence cooling by circulation of outside air at night.

Affected by Heat Lag

Authors of the paper concluded that:

Estimation of the cooling load for any building under any specified condition is seriously affected by the heat lag of the building and is apt to make such estimation of doubtful accuracy. Also, the cooling load per degree difference in temperature is not constant, but increases as the outdoor temperature increases.

Seasonal cooling requirements are extremely variable, the ratio of degree-hours for any two seasons in a ten-year period varying in as high a proportion as 7.5 to 1.

Use of a fan at night will contribute to more comfortable conditions the next day when cooling is not provided, or will reduce the load on the cooling equipment the following day.

Illustrated Lecture

Next speaker was C. R. Neeson, chief engineer of the De LaVergne Engine Co., Philadelphia, which has just introduced a new self-contained room cooler featured by a method of reversing the cycle of refrigeration for heating in the winter time. Mr. Neeson gave a highly interesting illustrated talk on this new product, details of which are omitted here because it was described in the May 24 issue of the NEWS.

Concluding speaker on the morning program was F. J. Hamilton of the Chicago office of the B. F. Sturtevant Co., reading a paper which had been prepared by S. M. Anderson, designing engineer of the Sturtevant company in Boston. He described the various types of propeller, centrifugal, and radial fans, giving characteristic curves of each.

Heat Transfer Discussed

Next paper was entitled "Heat Transfer in Unit Coolers," by W. R. Woolrich, Paul W. Scates, and Mack Tucker of the University of Tennessee, Nashville. The paper gave the results of an investigation made to determine the effects of humidity at temperatures above and below the freezing point of dry type air coolers. Results were all given in the form of charts.

Final technical session of the convention included four papers on various "Thermal Problems," the general topic of the afternoon. A. R. Stevenson of General Electric, vice president of the society, presided.

Buffington Describes Faraday

First was on "Absorption Refrigeration with Solid Absorbents," by Dr. R. M. Buffington who was active in General Motors' development of the Faraday absorption refrigerator (which uses strontium chloride, a solid absorbent).

The machine element of an absorption refrigeration system is a structure whose fundamental function is to transfer heat and ammonia vapor to and from the absorbent, Dr. Buffington pointed out. This generator-absorber is operated simpler on an intermittent cycle, it was found, using the same structure alternately as generator and absorber, than by separating them and cycling the absorbent continuously between them.

Heat transfer to the absorbent was one of the major problems in design, he reported, it being necessary to spread out the absorbent as thin as practical, preferably in contact with a metal fin to transmit the heat.

Another problem was control of the migratory tendency of the absorbent, caused by expansion of the absorbent during absorption of ammonia. In the Faraday machine the expansion forces were balanced, and progressive migration reduced by designing a symmetrical finning system, Dr. Buffington said. Then, to produce a porous, plastic structure, a solution of lithium nitrate in ammonia was adopted in the absorber as a further means of controlling migration.

Basic Aims in Design

Basic aims in the design of the absorber were adequate, even, symmetrical heating and cooling, and absence of any place into which the absorbent might be forced by expansion pressure, according to Dr. Buffington. Furthermore, fins must withstand some 25 lbs. of pressure, the absorber should be compact, and with low heat losses.

"The Faraday absorber," he said, "is heated and cooled indirectly by means of a volatile liquid F-11 (CCl_3F). During heating, F-11 is boiled in the external shell and condensed on the absorber wall. During cooling, it boils at the absorber wall, and condenses in a water-cooled condenser above the absorber."

He concluded his talk by a discussion of the metals selected, and a description of the final design.

Windows in Air Conditioning

Treating the subject "Windows and Their Relation to Air Conditioning," Dr. W. W. Shaver of the Corning Glass Works told about two types of AKLO heat-resisting window glass which his company is developing to keep out undesirable solar heat from air-conditioned rooms.

"We are all aware of the fuel-saving uses of insulation in the winter, but not so well acquainted with insulation against heat in the summer," he said. The use of screens to exclude this heat is one of the possibilities of summer insulation, he declared.

An ideal window would transmit all visible light from the sun, and keep out the remaining energy, he pointed out, so efficiency of glass may be based on the proportion of visible light transmitted, to the total energy dissipated.

He then showed a number of slides comparing the amounts of heat admitted by various combinations of single and double combinations of ordinary window glass, AKLO 394, and AKLO 396, indicating that the new glass is actually effective in reducing the radiant heat load from the sun in air-conditioning work.

Radiant energy may be as much as 50 per cent of the total cooling load under some conditions, he declared, although this can be reduced by some 30 per cent by ventilating the attic of a house and placing awnings over the windows.

Walter Fleisher of New York asked Dr. Shaver if the new glass would permit a radiation outward in the winter months, and was told that it would to some extent. Another delegate asked about the price, and was told that it is now quite high, but that the product is subject to price reductions with increased production.

Thermodynamics of CO_2

Dr. J. C. Goosmann of the Solid Carbonic Co., New York City, then read a paper on "Carbon Dioxide Thermodynamics," in which he traced the historical development of research related particularly to CO_2, listed thermodynamic deductions which have resulted from study of carbon dioxide, and described applications of CO_2 which have resulted from these deductions.

Dr. Goosman showed how some of his observations had rationalized the fact that carbon dioxide retains its refrigerating power, although it leaves the condenser in the form of a dense vapor rather than liquid, and had resulted in means for securing maximum efficiency from CO_2 in actual practice.

On the subject of thermodynamics, the speaker said that refrigeration engineers are concerned primarily only with the second law of thermodynamics—that heat is a form of energy, and that it is impossible to transform any part of the heat of a body into work except by a process which allows heat to pass from that body into another at a lower temperature.

"The refrigeration cycle is the heat cycle running backward," he explained. Heat of a higher intensity or temperature level comes from the first step, compression. This heat is then absorbed in a condenser; the now liquid medium is next put through a throttling process to a low temperature level where by evaporation it absorbs heat from a body at a slightly higher temperature.

"The throttling process is a pure case of heat energy loss, with increase in entropy in the given medium; the available energy so lost is not, however, worth recovering in practice, as it would require complications in machinery to do it."

Dr. Goosman had previously explained entropy as "a mathematical measure of unavoidable heat dissipation, to be restored by adding other heat or other energy, or ultimately by increasing the quantity of the medium necessary to get a given result."

June 28 was Engineers' Day at the World's Fair, with 15 engineering societies participating in the dedication and celebration activities. Main event of the day was the assembly of all the societies in Soldier Field to see Juan de le Cierva, inventor of the Autogyro, land one of the machines in front of the speakers' stand to receive the Guggenheim medal.

Presentation of this yearly award for greatest achievement in aviation was made by Edwin E. Aldrin, chairman of the Guggenheim award committee. Participating in the ceremony were Harry B. Gear, chairman of the engineering societies' committee, and Harold F. Pitcairn, president of the Autogyro Mfg. Co.

Engineer's Banquet

In the evening, an Engineers' Banquet was held in the Stevens hotel, with Harry B. Gear presiding and Chicago's Mayor Kelly delivering an address of welcome. Main addresses of the banquet were given by Edward J. Mehren, president of the Portland Cement Association, and Karl T. Compton, president of Massachusetts Institute of Technology.

Social events of the A. S. R. E. convention included a luncheon on the first day of the conclave at which the principal speaker was Col. Wentworth, a dinner dance at the Sherman on the second night of the meetings, and the engineers' banquet which officers of the society attended at Hotel Stevens on the last night of the convention.

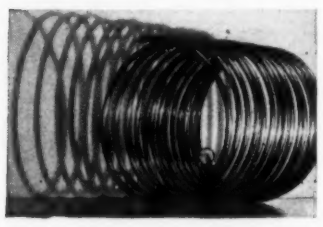
A visit to Chicago's planetarium was another feature on the social program, with both Society members and their wives invited to make the tour.

The social program for the wives of visiting refrigeration engineers was in charge of Mrs. Edna L. Reichl, chairman; Mrs. O. A. Anderson, Mrs. Edwin S. Libby, Mrs. J. E. Peterman, Miss Dorothy Fasse, and Mrs. S. C. Bloom.

Social events held especially for the women included a visit to the Fine Arts Exhibition at A Century of Progress Exposition and a reception and tea given at Hotel Sherman by Mrs. A. W. Oakley—both of these taking place on the convention's first day.

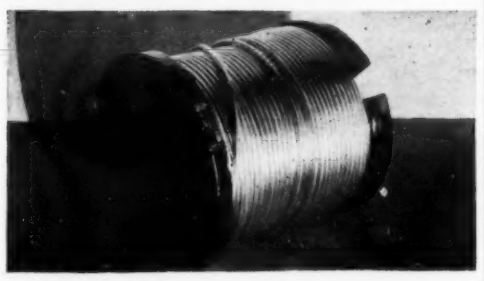
Ten member of A. S. R. E. comprised the convention's program committee. They were:

A. R. Stevenson, Jr., chairman, General Electric Co.; Prof. H. E. Keeler of the University of Michigan, Ann Arbor; Prof. H. J. Macintire, University of Illinois, Urbana; L. S. Morse, chief engineer of York Ice Machinery Co.; H. M. Williams, Frigidaire Corp.; A. C. Vogel, Vilter Mfg. Co., Milwaukee; W. L. Holladay, Geo. Belsey Co., Ltd., Los Angeles G. E. distributor; G. M. Kleuker, Baldwin-Southwark Corp., St. Louis; B. E. Seamon, consulting engineer, Chicago; C. C. Thomas, Kelvinator Corp.



Coil of 60 ft.

Reel of 425 ft.



FRENCH TUBES

are available in

LONG LENGTHS

A NEWLY developed process makes possible the production of French Seamless Copper Refrigeration Tubes as large as one-half inch in diameter, in lengths up to 200 feet. Smaller tubes are available in even *longer* lengths. For instance, the one-quarter inch tube illustrated is 425 feet long.

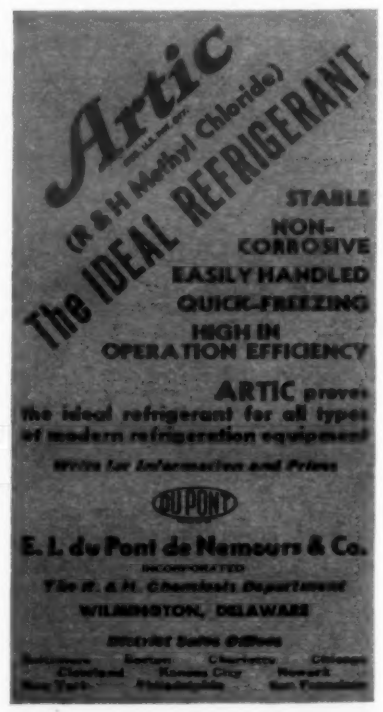
These new *long* lengths materially reduce the risk of failure by minimizing splices. Also the longer lengths reduce scrap losses, as the exact amount required can be cut without waste at the ends.

French De Luxe Copper Refrigeration Tubes are free from oxide and foreign matter. Each coil is *completely* dehydrated, sealed, rigidly tested and reaches you ready for use. For manufacturers who prefer to do their own dehydrating, the French Manufacturing Company produces copper tubes dried (*commercially* dehydrated) with either open or closed ends.

All French Copper Refrigeration Tubes possess the requisite properties for lasting, dependable service. Their grain structure is uniform. These important qualities are in every coil because metallurgical skill, long manufacturing experience and only the best of raw material go into their production. Additional information will be furnished upon request.

THE FRENCH MANUFACTURING CO.
General Offices: Waterbury, Connecticut

FRENCH REFRIGERATION TUBES



N.Y. Distributors' Association Adopts Uniform Practice Rules

(*Concluded from Page 1, Column 2*)

accomplished by the association is the formation of supplemental agreements to contracts on apartment house sales, which agreements protect the distributor's equity in unpaid for installations of equipment in buildings operated by mortgage companies, or in repossessed buildings.

The story of the development of the association, as outlined by Arthur Callahan, managing director, demonstrates that the association has grown to its present size and power because of the mutual acknowledgement of the New York distributors of electric refrigeration of the need for the functionings of such an organization.

At present 16 distributors, representing possibly 95 per cent or more of the total volume of sales in New York City, are members of the association. While the association has been functioning for two years, its original membership included but six distributors, the expansion taking place within the last year, since the incorporation of the association and the appointment of Mr. Callahan as managing director.

The association was incorporated at the behest of the utility member, so that no question might be raised relative to the utility entering into agreements that might be contrary to law or in restraint of trade.

Through this association the various distributors have come to know one another by their first names, and they have learned to trust each other to the extent that they gladly supply information which enables the managing director's office to be a clearing house for information and problems vital to the welfare of the entire industry operation in the New York City area.

As an office for clearing credit information the association works something as follows: a distributor who has been the victim of sharp practice will submit the name of the individual in the case to the association, where it is card filed and cross indexed as to affiliation.

Thus, when another distributor wants information on the individual or firm in question, it is merely a piece of clerical work to supply such information.

The organization and government of the association is relatively simple and informal. The governing body is a board of governors, consisting of members elected from each of the five classifications of New York distributorships.

This classification is predicated upon the best available information as to total volume of sales, and is in no way a reflection upon the virtue of the merchandise or financial status of the distributorships. Dues are apportioned in accordance with the ability to pay as evidenced by the classification into which the distributor is placed.

There is also one member who is a representative of the utility group. This does not, however, preclude a utility man from representing the class in which his particular company falls, so it is possible that two public utility representatives might have a place on the board of governors.

Officers of the board are the chairman and vice chairman. Present chairman is H. B. Barber, manager of the Kelvinator branch, who brought a wealth of cooperative experience with him from the Detroit Kelvinator branch, from which he was transferred a little more than a year ago.

Subcommittees are appointed to handle special problems. For example, two present committees of importance are the "dealer problem" and the "commercial" committees.

Members of the subcommittees are selected on the basis of their fitness for the task. A man who did not sell commercial equipment, for instance, would not be placed on the commercial problem committee. The managing director, and chairman and vice chairman of the board are ex-officio members of all subcommittees.

The association does not have a definite schedule of meetings. Neither is it necessary to "call a meeting for the purpose of calling a meeting." When a problem arises a meeting can be called in a few hours' notice, if necessary. So interested are the members of the association in this cooperative activity that the heads of the distributorships, the principals in the member companies, hurry to every meeting that it is possible for them to get to.

The association subscribes to various services and maintains a man at Albany during the legislative session to keep in touch with the legislative proceedings, and to look after the distributors' interests. The association also retains counsel, a lawyer who specializes in equity practice with particular experience in mortgages and contracts.

In Mr. Callahan the association has a managing director who is well-versed in one of the major problems of New York distributors—difficulties arising from the sale of refrigerators to apartment houses.

Mr. Callahan, a former construction engineer who supervised the work on the New Yorker hotel and the El Dorado apartments, was once a *buyer* and specifier of refrigeration for apartment houses, and has thus had actual experience with the problems involved.

One of the problems which the association has conquered developed out of a peculiar situation in New York City real estate operations known as the assignment of rents.

Mortgage companies handling New York apartment houses had developed a practice whereby upon default of the owner they would not repossess immediately, but would take an assignment of rents from the owner, leaving the title to the property vested in him.

If in such a case the distributor had merchandise installed in the building which was not fully paid for, he was without recourse to get what was accruing to him. The owner of record didn't have anything, and the real operator disclaimed any legal liability for the equipment which was installed in the building.

This state of affairs served to work a severe hardship on the distributors, and through the association they asked the mortgage companies for a hearing.

After a series of conferences, a series of supplemental agreement forms was drawn up, whereby the mortgage company assumed a limited liability, 33⅓ per cent to be exact, for refrigerators in buildings which they took over on an assignment of rents. The forms or "riders" also stipulate that in case the mortgage company takes over and sells the building, such sale is subject to the unpaid balance due on the refrigerators installed.

These supplemental agreements are used only in contracts made with leading mortgage and title companies, and are not extended to insurance companies.

Every finance company discounting paper in New York City is lending its support to the supplemental agreement plan, declare Mr. Callahan and Mr. Barber.

Other measures taken to insure uniform practices in apartment house selling include restrictions against subordination or release of liens, and the prohibition of renting refrigerators to apartment houses.

In connection with its provision for a minimum down payment on commercial sales, the association has also stipulated that where repairs or rehabilitation of old equipment is made in connection with an installation, cash is to be paid for the cost of such repairs, as the repair work cannot be repossessed.

For example, if a firm installed a $1,000 job and made $200 worth of repairs, it would get 20 per cent of the $1,000 and the actual cost (probably about $150) of the repair work.

At present Mr. Callahan and the board of governors are considering the possibilities of extending their functions and operating under the provisions of the National Industrial Recovery Act.

The present membership of the association includes the following firms:

Allen Ingraham, Inc. (Westinghouse distributor); Bohn Refrigerator Co. (branch); Consolidated Gas Co. (Servel and Electrolux distributor and representative of public utilities); Copeland Refrigerator Co. (branch); Frigidaire Sales Corp. (branch); Sam S. Glauber, Inc. (Mayflower distributor); Graybar Electric Co. (Graybar Ilg-Kold distributor); Grunow New York, Inc. (distributor); Grunow Distributors, Inc. (distributor); Kelvinator Sales Corp. (branch); Majestic New York, Inc. (distributor); Montgomery Ward & Co. (branch); Norge Corp. (branch); North American Radio Co. (Grunow distributor); Rex Cole, Inc. (General Electric distributor); Zerozone, Inc. (branch).

EXTRA FOOD CHAMBER DESIGNED BY CHIL-CHEST

BROOKLYN—Designed to supply an extra food storage compartment refrigerated by the surplus ice cubes from the electric refrigerator already installed in any home, the Chil-Chest is being introduced by the Chil-Chest Sales Corp. here.

The Chil-Chest is an insulated box made in two models—one intended for use on top of the electric refrigerator, the other being equipped with legs which permit its being placed in any convenient spot.

A container located in the top and center of the Chil-Chest holds the ice cubes which cool the chest. Immediately below the bottom of the ice container is a shelf which extends across the food compartment.

★

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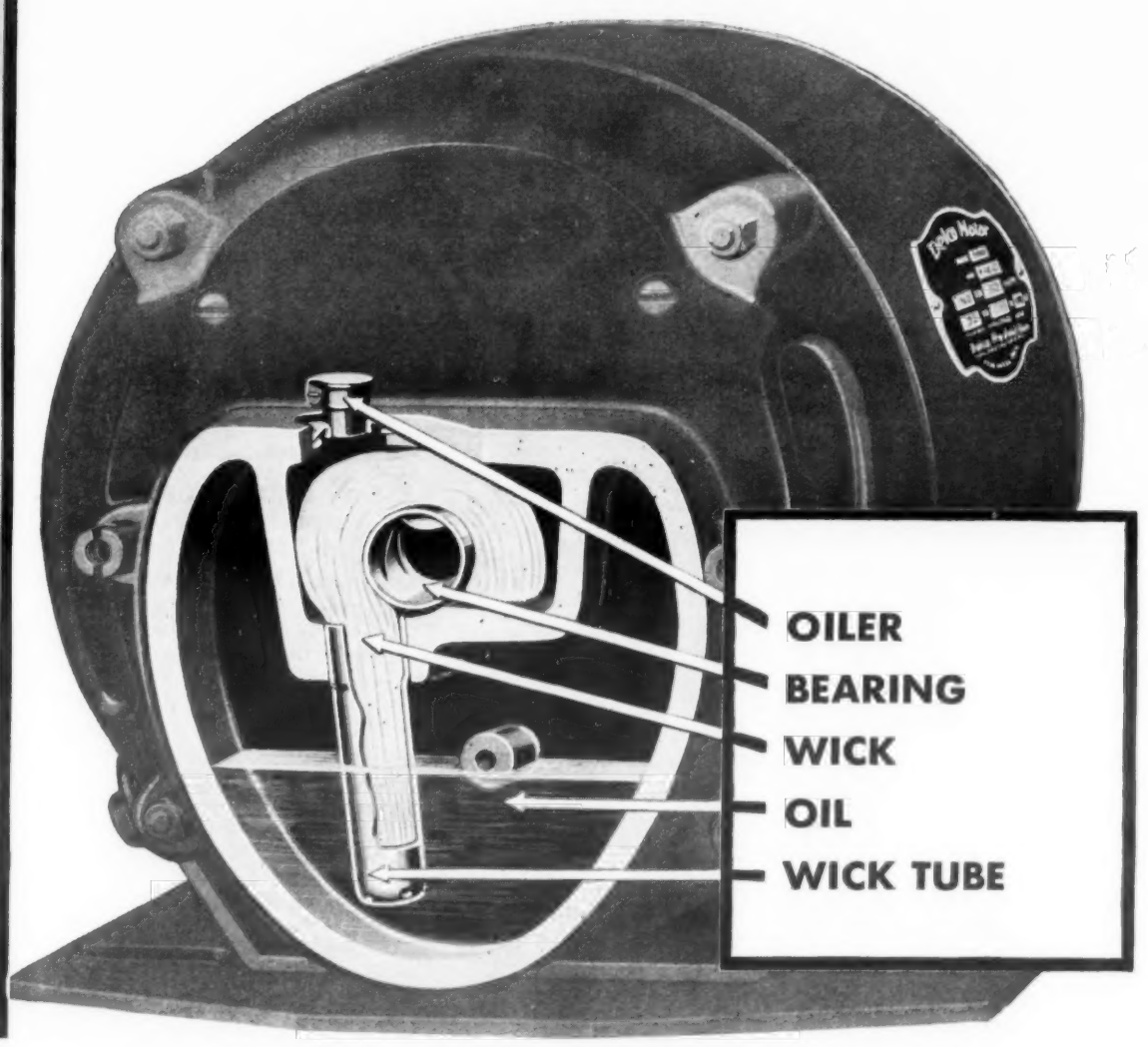
DELCO MOTORS

★



Whether you have a long or a short time guarantee on your product, it will pay you to use Delco Motors with *sealed lubrication.* These motors are oiled for years of service at our factory, and you can, actually, forget about their lubrication—you need not even worry about the service man forgetting to oil at time of installation. The oil cannot come out during shipment, during installation, or during operation; it is in the bearing to stay—retained by a patented non-spillable end-head which returns all excess oil to the reservoir. Also, over-oiling and leakage on the bearing is prevented by the patented arrangement of the wick and overflow control. You can always rely on regular Delco Motors to give entire satisfaction for more than 3,000,000 are now in household service; but why not give your owners the *exclusive* advantage of *Sealed Lubrication?*

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DAYTON, OHIO

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The Newspaper of the Industry
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EDITORIAL AIMS

To encourage the development of the art.

To promote ethical practices in the business.

To foster friendly relations throughout the industry.

To provide a clearing house for new methods and ideas.

To broadcast the technical, commercial and personal news of the field.

Looking Forward To 1934

IT was difficult to hold the A.S.R.E. crowd together at their annual spring meeting in Chicago last week. Too many distractions. Ordinarily they are as clannish and cohesive as a gang of American Elks or Shriners at a Paris bar. But this time they didn't herd.

Many of them were calling on customers. Nearly every company represented at the meeting does a sizeable business with Chicago firms, and the engineers who came to Chicago to foregather with their A.S.R.E. brothers were assigned to contact certain firms and individuals and help work out specific and mutual problems.

Another distraction was, of course, the Fair. Engineers can find more things to interest them out at A Century of Progress than most laymen; and much of the conversation of these men who design the products the industry sells had to do with the wonders they had witnessed out at the fairgrounds.

Informal Conversations

So the editors didn't have much opportunity to gather advance dope on what will be brought forth from the laboratories next year. This sort of thing usually comes out of off-the-program discussions and hotel room midnight sessions.

From conversations with various individuals at the meeting, however, we did gather two ideas of what may be expected next year:

(1) More developments in air conditioning.

(2) More styled cabinets.

Major emphasis is being placed on the perfection of various types of air-conditioning equipment in many of the industry's major laboratories at present, and by this time next year we may have some highly interesting devices on the market.

Accelerating Air Conditioning

Public acceptance of air conditioning and demand for it has been—and is being—greatly accelerated by the exhibits at A Century of Progress, and most companies now in the business are working hard to prepare products for this ready and waiting market.

Another factor in the further development of air conditioning is the intensive study of equipment now in the field. This year engineers are ascertaining just what the various "bugs" and objections are, and armed with this information are going back to their T-squares and slide-rules to design and redesign equipment which will better suit the needs of people in offices and homes.

More Styled Cabinets Coming

Styled cabinets, the engineers have been informed, were a good idea. Sales executives want more of them. A good measure of the extraordinary demand for electric refrigerators this summer must be due, these executives have figured out, to the attractive appearance electric refrigerators now present.

Prospects who have held off buying for some years because they wanted to "wait till the bloomin' things are perfected" have been convinced somehow by the neat and obviously improved lines of 1933 refrigerators that they are no longer contraptions, but have attained full mechanical stature and are now subject only to minor refinements. So styling is likely to continue in '34.

Engineering Fraternity Leads the Way

One of the most valuable assets the electric refrigeration industry has is its engineers, of which the American Society of Refrigerating Engineers is the ranking group. Not only do they labor to give salesmen—and the public—what they want, but they work to anticipate those wants.

It was fitting that the A.S.R.E. meet in Chicago last week, along with a number of other engineering societies, in connection with A Century of Progress exposition, for that century of progress has been effected largely through the efforts of engineers.

What they saw at the exposition, what they learned there about air conditioning and about new trends in styling for the new day, will undoubtedly be reflected in the electric refrigeration products which are to be marketed next year and in the years immediately following.

WHAT OTHERS SAY

KANSAS CORRECTS ITS MISTAKE ON MERCHANDISING

RESTRICTIONS imposed against the sale of domestic appliances at retail by power companies in two states have just been removed. The Supreme Court of Kansas has ruled that the Kansas state law is unconstitutional, being in violation of the Fourteenth Amendment, since it discriminates against the public utility, in permitting others to merchandise and denying it that right. The court held that its franchise entitled a utility company to thus promote and further the development of its business. Also the state Appellate Court of Texas has dissolved an injunction, granted some time ago, against the San Antonio Public Service Co., forbidding it to sell electric and gas appliances. Here too the court held that the sale of load-building appliances is a proper function of the utility's business. In other words, calm judgment is beginning to assert itself in this matter and, as usual, "truth beareth away the victory."

Time is going to demonstrate that all the agitation against the merchandising of appliances by power and gas companies has been a grave mistake, in which both sides have shared. Certain electric and gas utilities, inexpert in retail selling, established merchandising policies that were unfair to the local dealers who were competing with them. Exasperated at their inability to secure redress, these dealers started an agitation, through their national associations, and legislation was introduced in many states. Kansas and Oklahoma passed prohibitory laws. And when the power and gas companies quit merchandising the mail order houses and chain stores stepped in and grabbed the business at cut prices. The net result was that the dealers gained nothing and destroyed the most creative influence for market development.

All this is gradually being found out, and as it becomes more fully understood the right of the power company to build its load by merchandising domestic appliances will no longer be questioned. For it is more than a right. It is a responsibility. Without organized load building the market does not grow and the dealer's business languishes also. This places an obligation on the utility to go forward and develop the use of electricity in the interests of the trade and the public, as well as of its own stockholders.—*Electrical World.*

An Editor on Wheels

Stories of Interesting PLACES in the Refrigeration Industry

By GEORGE F. TAUBENECK

Indianapolis, Ind.

You have to go inland to get the true flavor of a country. Seaports and lakeports are more or less cosmopolitan; they partake of the odors and essences of all the lands with which they have traffic.

Too, they develop protective coloring and unnatural armor to safeguard themselves against the attacks of the dominant strains—both foreign and from other domestic cities—which are continually landing on their shores.

True inlanders, however, are allowed to grow up naturally. They are not assailed by foreign hordes. Their habits include no borrowed polyglot of strange customs. They can develop indigenously, close to the soil. No seasoning or spicing from abroad enters their melting pot. They stew in their own juices.

Indianapolis, then, is probably the most American of all American cities. Its citizenry sprung from a fusion of two migrations: covered wagons which came from New England, and pack trains which hailed from Dixie. Here the North and the South met, and were joined in wedlock.

In St. Louis the North and the South commingle, brush elbows, and glance askance at each other. To some extent they mix; but there is no alloy. The two races retain their identifying characteristics.

Not so in Indianapolis. The melting occurred more than a century ago; the alloy has hardened; and now it is typically American.

All the more is this so because Indianapolis is simply a large collection of Hoosiers. It is not a personality distinct from the surrounding and contributing countryside, as are other American cities. It is simply an accretion of the people who live in Indiana.

More than 85 per cent of the population of Indianapolis is native white. Of the remainder, 12 per cent are negroes and only 3 per cent are foreign born. The preponderance of this latter element are English, Irish, Canadian, and German. Almost the only language heard there is English; and a pure form of English it is, too.

When Indiana became the nineteenth state back in 1816, Congress thought it ought to have a capital, and donated four sections of land to the newborn state for that purpose.

This square mile was cut out of the geographical center of the state. On it was marked out a rub-and-spokes city by the same engineer who designed the layout of Washington, D. C. The two cities have points of similarity in spirit and human composition, just as they do in physical appearance.

Resting on a compass-level plain, Indianapolis is a city without natural barriers. In its exact center is a 284-foot monument (Soldiers and Sailors), which in the United States is topped only by the Washington monument in the nation's capitol. Around this is a circle, from which radiate four wide avenues. All streets are unusually wide.

Both the corn and wheat belts are levied for tribute by this inland metropolis. The New York Central, Pennsylvania, Baltimore & Ohio, Illinois Central, Nickel Plate, and Monon railroads bring in vast quantities of grain for redistribution. There is a well-developed system of interurban electrical transportation, and more than 100 truck lines also serve this community.

Meat packing vies with the metal trades and machine shops for the title of the city's leading industry. Canning, dairy products, bakery products, candy and confections, coffee roasting, and box making are among the chief industrial classifications (others: automotive accessories, garments, automobiles, publishing, biological products, paints and varnishes, furniture).

So you can see that Indianapolis is really rural, that its industry centers around the utilization of farm products. As one might expect under those circumstances, the open shop system of labor prevails.

As partial proof of the essential Americanism of Indianapolis, let us submit that more than 40 American organizations have national headquarters there, including the American Legion, the United Mine Workers of America, the National Retail Hardware Association, the National Food Brokers Association, the International Typographical Union, the Journeymen's Stone Cutters Association, the International Brotherhood of Teamsters, the United Christian Missionary Society, and American Newspaper Publishers Association—to select a few which show a representative spread.

Great joiners, these Hoosiers. They like to band together. The Ku Klux Klan consumed Indianapolis like wildfire, as it did the rest of the state. Churches prosper, comparatively speaking. And politics! As Ohio produces Presidents, Indiana rears Vice Presidents. Government is the chief sport of the inhabitants.

We have a right to expect that the most typically American literature should come from Indianapolis. It does. No other city can match this list of honestly native authors:

James Whitcomb Riley, Booth Tarkington, George Ade, Kin Hubbard, John McCutcheon, George Barr McCutcheon, Meredith Nicholson, General Lew Wallace, Gene Stratton Porter, Albert J. Beveridge, Edward Eggleston, Theodore Dreiser, Don Herold, Elmer Davis, Maurice Thompson, Charles Major, William Vaughn Moody, Robert Underwood Johnson, David Graham Phillips, Albert Edward Wiggam, Claude G. Bowers.

In keeping with the city's native-soil literary tradition are its newspapers, particularly the Indianapolis *News*, which has been genuinely interesting and well-written for decades. First city to begin teaching the printing and publishing trades in its public schools, Indianapolis places great stress on the importance of the printed word.

Go to Pittsburgh, young man, if you would see the steel which built America's prosperity. Go to Cleveland if you would see the colorless but substantial character into which that prosperity has settled. Go to New York if you would see the world; to Boston if you would see yesterday; to Chicago if you would see tomorrow. But should you want to see a real American, an unadulterated, unsullied, unsophisticated native—go to Indianapolis.

LETTERS

Is Our Face Red?

"Please this next year lets have more facts about actual manufacturing, engineering features broadened and stated in more intelligent manner, manufacturing methods, something interesting and not so much about the social aspects and doings of the would be big-shots. Making your paper more interesting to the average subscriber whom is probably your largest contributor and source of revenue. Less space devoted to the Nema crowd. You will probably add to your circulation and be more beneficial to the average industry as a whole. Read several other magazines in other lines established for years and they have information and news in general and not whom gave a pink tea or played golf last week with Mr. Etc. and Etc."—B. W. Hay, 822 Wyandotte, Royal Oak, Mich.

Aids His Work

Pittsburgh
June 24, 1933.

Editor:

Let us hope that your publication will continue the fine work it has been doing, as I feel personally there are a lot of things I would rather give up before I would give up my copy of ELECTRIC REFRIGERATION NEWS, as it has been a very distinct aid to me in my work.

B. L. KULICK,
Grigsby-Grunow field representative.

Written to be Read On Arrival

Waugh & Josephson, Ltd.
Dairy and Refrigerating Engineers
Sydney, N.S.W.
May 12, 1933.

Editor:

Your records will disclose that my company has been subscribing to ELECTRIC REFRIGERATION NEWS for some years, and I suppose you would never have heard from us only I want some information; but before asking a favor I cannot allow the opportunity to pass without telling you how much your publication is appreciated by the executives of this company.

Your slogan, "Written to Be Read on Arrival," is very apt. I read every word from cover to cover the day the NEWS arrives. Some of the reading is strange to an Australian, the advertising "stunts" appear to me very expensive, and often savoring of the burlesque; but of course, I fully appreciate we live in different countries. The information regarding improvements and technical advice is carefully absorbed, as I realize it is the result of many years' experience and intensive research.

H. L. CARR,
Manager for New South Wales.

G-E Salesmen Qualify As Officers In 'Man Hunt' Contest

CLEVELAND—Outstanding records made during the recent General Electric "Man Hunt" refrigeration sales contest have entitled several G. E. salesmen throughout the country to captains' and lieutenants' badges.

Salesmen promoted to the rank of captain (for selling 150 per cent or more of quota) include:

Clark Adams, Inc.—H. J. Preston, Jr., Bart Bullock, Curt Muller.

Albert Ahrens Co.—J. C. Britt, T. F. Chronister, Alfred Floyd, R. S. Maxwell, F. V. McKee.

Lieutenant badges were awarded the following salesmen (for selling 100 per cent or more of quota):

W. D. Alexander Co.—W. N. Floyd, George Ramsey, John Vickers, J. T. Fender, S. Robinson, B. W. Griffith, W. W. Howell, Willis Lang, L. E. Kendrick, L. T. Holt.

Bard & Barger, Inc.—D. E. Tatem.

George Belsey Co.—P. Youell, D. E. Tatem, A. S. Vincent, J. C. Morganthaler, H. C. Woods, Mitchell, L. C. Taylor, J. Palmer, W. G. Bradley, W. C. Schouten, De Cuir, Randall, Gamble, Meany, George Ogden, E. D. Cooper, Burroughs, Howell, McWhinnie, Campbell, Babbitt, Frost, A. E. Warren, M. W. Johnson, Mrs. C. Reed, A. M. Morrell, Dan Webster, L. J. Klimes, H. Kennan, C. E. Sherwood, Buckley, Fredericks, Stake, Haun, Clauson, Bakke, Nielsen, Ogden, Rhode.

Breckenridge, Inc.—Thomas Hilliard, David Linton, Joseph Geehern, R. E. Haley, A. E. Loomis, J. Harris Lamson, Robert Granfield, Leon Starkey, E. J. Musgrove, Frank Deeley, A. L. Miehls, R. W. Breckenridge.

Judson C. Burns—Roy Bradley, E. E. Murray, E. McGrath, F. Andrews, M. Segal, H. Leswing, P. Mills, W. E. Gilbert, H. Kahn, N. Fleming, C. Samsel, H. Eldridge, F. Huet, G. Kahn, Thomas, C. Danenberg, D. Young, H. Milligan, G. Fairburn.

Caswell, Inc.—Mr. Jenkins, Bill Tuttle, Roy Grant, Mrs. Knight, Mr. Pemberton, W. J. Richter, C. D. Brown, Seidschlag, E. Knight, Gordon Caswell, F. Belser, Jack DuBrou, A. S. Perkins, Al LaRa, F. F. Carson, M. Burt, Harold Witbeck.

R. Cooper Jr., Inc.—L. J. Baron, A. G. Whitmer, W. J. McGovern, W. H. Ericson, G. O. Hunt, A. C. Ahrendt, J. L. Hulett, W. A. Stevens, F. J. Lubin, F. Rifas, F. H. Rochford, G. Fruechtenicht.

E. Pulver Cook, Inc.—Roy Hawes, Walter Jason, Phil Sherman, Ted Chaffin, George Rickard, George Davoll, Edward H. Ryan, Henry Hazelton.

L. W. Driscoll—F. J. Cox, C. C. Jeffreys, Harry Hundley, W. T. Bryant, R. K. Weeks, W. L. Hopkins, J. C. Sumner, Ralph Smith.

Edmundson Refrigeration Corp.—Rhea Hudnall, Dean Saxby, Joe Hatley, G. Minton, W. W. Semmelrogge, A. D. Barrow, E. L. Taylor, A. T. Holley, George Johnson, W. B. Richardson, G. J. Glidden, S. W. Frye, A. B. Hays, John Wakefield, H. C. Lee, Ben Tucker, W. F. Lemken, L. J. Johnston, W. H. Henry, W. B. Nelson, J. K. Ham, R. M. Andrews, L. N. Brannan, R. C. Wakefield, C. DeCuir, E. J. Clubb, Frank Smith.

Electric Housekeeping—J. P. Almann, C. L. Munson, S. S. Baum, J. A. Lazear, J. E. Bensen, A. S. Kosser, E. J. Wintering, J. Connors, F. L. Knapp, R. Connors, J. A. McElhaney, E. C. Asbeck, C. O. Hibbard, A. L. Carey, A. L. Lloyd, R. J. Raye.

Electric Appliances, Inc.—Homer Grider.

Electric Household Appliances, Inc.—G. H. Flynn, C. X. Guinn, R. M. Lawler, E. D. Williams, H. C. Osborn, E. R. Williams, J. L. Lowery, E. B. Sanders, Mrs. Mattie Hilton, M. C. Calvert, S. H. Hemphill, C. D. Stringer, S. W. Scales, W. R. Edmundson, C. F. Hardy, Arthur Wey, J. D. Clower, Loyd Davis, B. C. Karcher, J. C. Williams, L. Allen, R. McClure, L. L. Robinson, Mark Weathers, C. V. Werlla, E. V. McNeese, W. D. Lamar, J. L. Lowry.

General Appliance, Inc.—J. Kashada, B. H. Smith, N. J. Breaux, G. W. Hall, I. B. Brown.

General Electric Supply Corp. (Portland)—W. H. Durland.

Glueck & Co.—C. J. Spelman, Lee Kynett, H. J. Fitchner, W. M. Sause.

Philip H. Harrison & Co.—A. J. Keilly, L. G. Thalhamer, R. A. Hey, F. H. Moreau, I. L. Porter, J. H. Noll, E. D. Schafer, F. W. White, R. S. Roat, A. S. Keimig, L. H. Hart, W. H. Simendinger, Pearl Quimby, M. H. Ford, Mrs. M. Baldwin, L. G. Thalhower, E. B. Leland, B. H. Lyon, S. B. Smith, T. P. Bromley, Peter Musto, H. E. Talbott, W. D. Scott, K. M. Rendall, S. Barrett, Joseph Morrison, John Bollwark, Frederick Cavers, H. Doane, Frank Rose.

The Hines Co.—Sam Leesing, J. W. Reitz, A. T. Thawley, W. F. Gibson, A. G. Mitchell, C. W. Harvey, J. L. Myers, C. E. Mezick, Ben Crouse, George Schaefer, W. B. Purdy, T. K. Mesereau.

A. Wayne Merriam, Inc.—J. E. Stokes, R. Kaynes, L. D. Bates, F. Winfield, L. B. Holt, L. F. Bragg, R. G. Schiele, R. Izzard, D. Sorenson, A. W. Munn, George Linzey, H. H. Fookes, C. W. Haefner, F. Snyder, N. W. Bennett, F. G. Ruso.

R. S. Montgomery, Inc.—J. C. Grimes, Joe Bradshaw, A. G. Pless, J. T. Dickenson, Jr., W. S. Oglesby, A. L. Shelton, C. N. Kean, C. W. Cleaton, R. L. Harris, R. M. Williams, R. J. Carr, C. F. Bauman, M. G. Smith, Norman Brewington, B. B. Angle, L. E. Bitting, S. I. Davis, Lloyd C. Pulley, R. B. Johnson, H. M. Grubbs.

Modern Home Utilities, Inc.—Jennie L. Payne, Gustave Zurcher, Fred Carlton.

National Electrical Supply—J. F. Huber, Eula Maffatt, T. L. Morgan, G. W. Cabell, D. R. Huey, E. J. Porter, W. E. Yates, W. H. Carryl, R. M. Frost, W. T. Adkins, Theo. Snyder, J. A. Barringer, E. R. Hodges, B. M. Varnum.

O'Bannon Bros.—C. A. VanDine, F. P. Best.

N. K. Ovalle, Inc.—C. A. Fitch.

Perry-Browne, Inc.—John Ballenger, G. A. Miller, V. L. Brabham, H. S. McKeown, S. M. Pierson, I. H. Henderson, W. A. Hammett, Mr. Stovall, Lyn Brabham, G. H. Browne, Mr. Hallman, T. B. Hinnant, J. A. Hood, E. L. Layton, O. T. Lawing, Ralph Matthes.

Pendergraph Brown, Inc.—H. A. Johnson, A. H. Brantley, C. R. Uhlmann, J. E. Douglass, Russell Lyle, L. W. Hamilton, Mrs. C. London.

O. F. Stuefer, Inc.—J. D. Faber.

Storz Electric Refrigeration Co.—O. Humphrey, P. Ward, J. Thomson, M. McClelland, A. E. Gausman, W. Johnson, C. Paine, Ed Reed, Kenneth Parker, C. A. Thomas, William Ehlers, S. Huff, Mehring, Gould, Miller, E. McKissick, H. Heine, M. Richardson, E. L. Roggey, C. A. Eck, G. C. Vick, C. J. Schatz, G. Cofer, C. Davis, M. Markle, C. Ruth, P. Smith, Van Ackerman, Bechtold, H. Bowen, R. Gill.

W. L. Thompson, Inc.—C. Hicks, D. J. Sullivan, Louis, Megathlin, R. H. Gardner, E. C. Thorpe, E. F. Durrell, Fitzpatrick, George Freeman, Norris, R. H. Gardner, P. J. Weers, A. E. Bailey, R. Johnson, O. C. Bailey, H. Cook, George Irwin, W. J. Catty, Ronald O'Hanly, B. R. Paulino, E. A. Henderson, R. P. Sprinkle, A. H. Legace, Joseph Betts, C. W. Haines, M. A. Osborn, J. F. Hill, S. Preston, R. Foy, Royal F. Baker, J. McCormack, T. L. Smith, M. M. Butter, C. W. Smith, S. K. Gibson.

Thompson-Sterling, Inc.—George Metz, J. S. Horne, C. C. Lambert, Hugh Soward, Sewell Ford, J. W. Evans, E. W. Head.

Valley Electrical Supply Co.—F. Chambliss, Max Hoen.

Clark Adams, Inc.—James B. Bowker.

Albert Ahrens Co.—Joe Hanson, J. O. Britt, G. T. Raborn, D. E. Tiller, George Bromley, Alfred Floyd, S. T. Simpson.

W. D. Alexander Co.—G. S. Brown, Joe Adams, W. W. Blakely.

Bard & Barger, Inc.—C. F. Davis, Gerald Heil, Paul Thompson, Spencer Davies, P. Mahaffey.

George Belsey Co.—Bode, Edwin Green, B. L. Russell, Wayne Sharp, Bradley, Burry, Tower, Clark, Rex Delling, Van Drimlen, Atherton, Barlow, Baxter, C. Bell, Don Bell, Borah, Brown, Berry, Courtney, Cowan, Crow, Deaver, Dubsky, Glancy, Zintgraff, Brainerd, Blank, Galbreath, Laursen, Owens, T. Johnson, Pennekamp, Louis Fix, T. H. Johnson, Anderson, R. W. Johnson, Kennedy, Lindgren, Marshall, Nolan, Nutsch, Pressnal, Shull, Slater, Snodgrass, Sturges, Tucker, Van Camp, Williams, B. B. Wood.

Breckenridge, Inc.—Walter Hardy, W. F. Learned, Jack Turbidy, W. H. Marsden.

Judson C. Burns—B. White, A. A. Toohey, Mr. Gannon, S. Slack, C. Lord, P. Logan, M. Kettner, J. R. Riley, D. Leavitt, J. Willi, S. Schaefer, G. Hunter, M. Foulke, G. Slater, J. Shinnick, W. Kiesel, G. Spangler.

Caswell, Inc.—Lyon, S. C. Myers, M. Clay, A. Bennett, S. W. Wester, C. Detmers, M. F. Cahill.

R. Cooper Jr., Inc.—L. F. Meinert, R. P. McElhaney, G. H. Gering, H. Van Schaack, R. C. Campbell, R. N. Reed, C. Edling, H. E. Roberts, B. A. Salava, S. J. Showalter, P. F. Wegner, R. N. Eischen, E. E. Noell, J. F. Phillips, B. Weiser.

E. Pulver Cook, Inc.—Will Hathaway, Earl Jacobs, Frank Robinson, Alfred Ganato.

A. S. Dunning, Inc.—J. Secard, L. Eggerich.

L. W. Driscoll—S. B. Ferrell, M. C. Fudge, Fred Beck, J. O. Bullock, B. D. Waller, Dave Conrad, Crawford Beck, D. H. Harrell, L. C. McCarson, H. V. Trivette, F. W. Dick.

Edmundson Refrigeration Corp.—E. M. Mahan, W. T. Thagard, J. Wakefield, J. R. Richardson, Shaw, L. N. Bronnor, Mason, Ellis Taylor, T. O. Charlton, J. H. Gouldy, George Riesel, Choate, G. Schluntz, S. E. McIvor.

Electrical Housekeeping—C. J. Russell, J. O. Bryan, W. McKinzey, F. A. Davis, S. Gaskell, R. McKinzey, W. Russell, C. H. Wonn, W. A. Gaetjens, Charles Conrad, F. Brooks, P. Moewe, William Curtis, J. A. Randall.

Electric Appliances, Inc.—H. L. Wood, Wallace Evans, L. S. Oppenheim, H. C. Devon.

Electrical Household Appliances, Inc.—Ralph Helm, Marvin Bates, Al Smith, G. C. Ramsey, W. S. Moody, R. B. Smith, L. B. Gilbert, J. E. Williamson, F. F. Bennett, R. E. Wiseman, R. S. Gaston, W. C. Peterson, W. H. McAdams, R. W. Chapman.

General Appliances, Inc.—L. C. Moore, W. A. Wilson, George Kehoe, Sam Fucich, Walter Hahson, J. L. McCrary, R. V. McGarven, Valry Dugas, L. J. Wilson, Hazel Kelly, C. J. Machall, L. D. Pepper, Jr., W. J. Ducate, D. P. Stevens.

General Electric Supply Corp. (Portland)—J. Kavanagh, L. L. Perry.

General Electric Supply Corp. (St. Paul)—Leo Ellis.

Gould-Farmer Co., Inc.—William LeFevre, L. W. Stenson, Harry Vosbourgh.

Glueck & Co.—D. Whaley, Mrs. H. V. Erhart.

Philip H. Harrison & Co.—Thomas Casey, H. T. Harra, R. L. Snyder, William Henseler, Richard Haberman, Moe Sanders, Anthony Robbins, James Brophy, T. W. Fisher, R. J. Hollman, H. R. Blaine, W. M. Smith, J. H. Titcomb, W. E. Ryan, C. L. Haring, F. D. Kullman, C. E. Hamblen, J. C. Osborne, H. W. Bell, W. P. Friend, A. R. Barker.

The Hines Co.—L. K. Blucher, A. W. White, W. R. Meredith, E. H. Bowman, J. G. Tarring, H. Jennings, E. E. Howser, F. Schirmer, C. L. Anders, F. L. Williams, J. S. Geiman, Fred Knoop, C. A. Yockel, William Morrow.

A. Wayne Merriam, Inc.—H. Henry, J. Hurley, J. A. Goodwin, E. Coons, L. E. Lynd, A. S. Murphy, J. R. Wood.

R. S. Montgomery, Inc.—G. D. Hunter, J. W. Townes, R. M. Huntsman, F. A. Turner, W. C. Smither, L. P. Simmons.

Modern Home Utilities, Inc.—P. A. Shepardson, F. R. Daniels, D. M. Gray, E. H. Benson, Robert Storm, W. B. Luby.

National Electrical Supply — N. D. Warner, J. Cameron, R. H. Bloodgood, W. Dalryample, W. S. Carroll, Jr., H. E. Nicholson, Fred Williams, A. P. Shanklin, Miss A. Maye.

Perry-Browne, Inc.—C. P. Ballinger, Conway Jones, E. M Craig, W. S. Ketchin, Leon Murtiashaw, Dan Matthews, W. F. O'Kelly.

Pendergraph Brown, Inc.—W. L. Elliott, F. C. Craddock, J. P. Patton, W. W. Cloud.

O. F. Stuefer, Inc.—E. Mattson, R. Glanville, Axel Turnguist, M. James.

Storz Electric Refrigeration Co.—Harry Disbrow, B. Golliglee, H. Baudo, LeMaster.

W. L. Thompson, Inc.—James Corbett, F. Streiferd, C. W. Hawes, Samuel Kinhan, F. S. Marshall, Wilbur Roberts, Harry Priestly, W. H. Bader, Frank Parsons, L. Stockbridge, Joseph Sullivan, John Drury, Howard Cooke, Fred Dale, James Taylor, A. W. Hansen, Clyde Bailey, D. F. Noonan, R. McFee, J. E. Miller, E. P. Flynn, Lawrence Tozier, E. M. Shaw, J. R. Lawrence, G. Currier, Harry Olson, R. J. Patton, Warren Daley, A. Harris, John Kee, Paul Gold, E. Boswell.

Thompson-Sterling, Inc.—J. Boulcott, J. C. Gorman, W. S. Morrison, G. F. Dodge, Ray Schreck, Edward Rietze, Jr., H. C. Kirk.

Valley Electrical Supply Corp.—J. B. Davis, H. C. Schneider, W. H. Garland.

N. Y. Gibson Distributor Orders Trainload

GREENVILLE, Mich.—En route to A Century of Progress exposition in Chicago, three officials of Bruno-New York, Inc., Gibson distributor in New York City, stopped off at the Greenville plant long enough to place an order for immediate delivery of a full trainload of refrigerators.

The representatives from the distributorship were Irving Sarnoff, president; Jerome Harris, treasurer; and Harry Glasser, sales manager in charge of refrigeration. Frank S. Gibson, Jr., vice president in charge of sales, closed the contract.

COLE'S HOME ECONOMIST GIVES DEMONSTRATION

NEW YORK CITY—Miss Ilah Manchester, home economist for Rex Cole, Inc., New York distributor of General Electric products, has been giving demonstrations in the department stores of B. Gertz, Inc., at Jamaica, and Adams-Flanaga in the Bronx.

Both stores feature General Electric all-electric kitchen displays.

Apartment House Owners, Builders Visit G. E.

SCHENECTADY, N. Y.—To acquaint apartment house owners and builders with advantages offered through purchase of General Electric refrigeration, Rex Cole, Inc., G. E. distributor in New York City, invited 120 builders, prominent members of realty and insurance companies, and officials of banking firms in that city to be his guests at a tour of inspection of the General Electric factory here, June 28.

Leaving New York City in the afternoon of June 27, the delegation made the trip to Albany on the *S. S. Hartford* of the Hudson Navigation Corp. Busses conveyed the visitors to Rice Hall, in the General Electric works at Schenectady, where J. J. Walker and Fred C. Sarchet of the refrigeration engineering department greeted them.

The tour of inspection included a visit to the turbine department, which General Electric officials say is the largest machine shop in the world.

Of particular interest to the group was the refrigeration machine division, where Monitor Tops were seen in process of manufacture. The porcelain department was also inspected.

Lunch was provided at the Mohawk Golf club, Christian Steenstrup of the Schenectady plant being the speaker on the program.

FRIGIDAIRES ARE PLACED IN APARTMENT

NEW YORK CITY — A large apartment house at 2434 Webster St. here which is owned and managed by the Standard Oil Co. of New Jersey, has been equipped with Frigidaires, according to Con M. Eakin, general manager of Frigidaire Sales Corp., New York City.

BRAZILIAN CO. ENDS 3-MONTHS CONTEST

SAO PAULO, Brazil — During a three-months sales contest which closed recently salesmen of Campos Salles & Cia, Kelvinator distributor here, sold $25,203 worth of refrigeration equipment, according to Joaquim de Campos Salles.

Salesman Antonio Vasques turned in $5,746 as his sales achievement, while Helio Bianchini was second with $4,494 worth. Pedro Scouto took third place by selling $3,595 worth of Kelvinators.

Sr. de Campos Salles, who visited the Detroit Kelvinator plant a short time ago, reported that 80 per cent of the sales made in Sao Paulo are commercial, due to high prices on import duties and low average incomes. Most people, he stated, could not afford domestic refrigeration, but commercial refrigeration is an absolute necessity.

British Utility Promotes Sales by Train

LONDON, England—Reminiscent of the "42nd Street Special" train which carried American movie stars from Hollywood to the Eastern seaboard during March to advertise Warner Brothers pictures and General Electric appliances, is a three-car show train now tourning Great Britain under the sponsorship of J. S. Fry & Son.

Purpose of the tour, scheduled to take three months, is to popularize new appliances and advertise electricity throughout rural Britain. The train is decked out in blue and gold, with one car serving as showroom, another as sleeping quarters, and the other as storeroom and source of electrical energy supply.

A FACT THAT 10 YEARS IN THE REFRIGERATION INDUSTRY HAS TAUGHT US

. . . *We try to be*

CONSTRUCTIVE

Advertising is destructive when it makes exaggerated claims — indulges in half-truths — or tries to cast discredit upon anyone. Selling is destructive when it does likewise — when it employs price cutting tactics and promises more than can be profitably delivered. We are making every effort to build our business on a constructive basis and our advertising and sales policies are shaped accordingly.

UNIVERSAL COOLER CORPORATION

DETROIT, MICHIGAN — BRANTFORD, ONTARIO

MANUFACTURERS OF A COMPLETE LINE OF HOUSEHOLD AND COMMERCIAL REFRIGERATION EQUIPMENT

BEER COOLING

BEER BOTTLE COOLER ANNOUNCED BY S. & S.

LIMA, Ohio—S. & S. Products Co. of this city, manufacturer of bottle beverage coolers, has introduced a new, self-contained portable bottle cooler, especially designed to cool beer.

Some 500 units in the new "AMR" model, introduced this year, have already been shipped, according to J. M. Schilling, president of the company.

The bottle compartment, which is located in the top of assembly, has a capacity of from 64 to 72 12-oz. bottles, depending upon the size of refrigerating coil used.

The compressor is housed in a compartment in the base of the assembly, with louvres on all four sides.

The cabinet is of all-steel construction, and is insulated with Insulite. Lids are of the hinged type.

The entire assembly is on casters, making the bottle cooler portable. Overall dimensions are height, 37 in.; width, 31 in.; depth, 22 in.

SCHUMANN-HEINK TO SING AT CLEVELAND EXPOSITION

CLEVELAND—Madame Schumann-Heink, the U. S. Marine Band, Frances Alda, and famous radio acts and orchestras will entertain patrons at an immense beer garden planned as a feature of the coming American Beer exposition, to be held here Sept. 2 to 9 inclusive.

Seating 10,000 persons, the beer garden will occupy the main floor of the Public Auditorium. It will be open to the public.

Dayton Beer Pump Uses Wicks for Lubrication

DAYTON—A piston type compressor with wick oiling system of lubrication is a feature of the design of the beer pump which is being manufactured by Dayton Pump & Mfg. Co.

This system of lubrication plus a filter is said to keep oil from entering the air tank.

The new pump consists of an air compressor, belt driven by a ¼-hp. motor, all mounted on a round horizontal pressure tank. Mounted alongside the motor is a double pole automatic switch which starts the compressor at about 20 lbs. pressure and stops it when the pressure reaches 35 lbs. per sq. in.

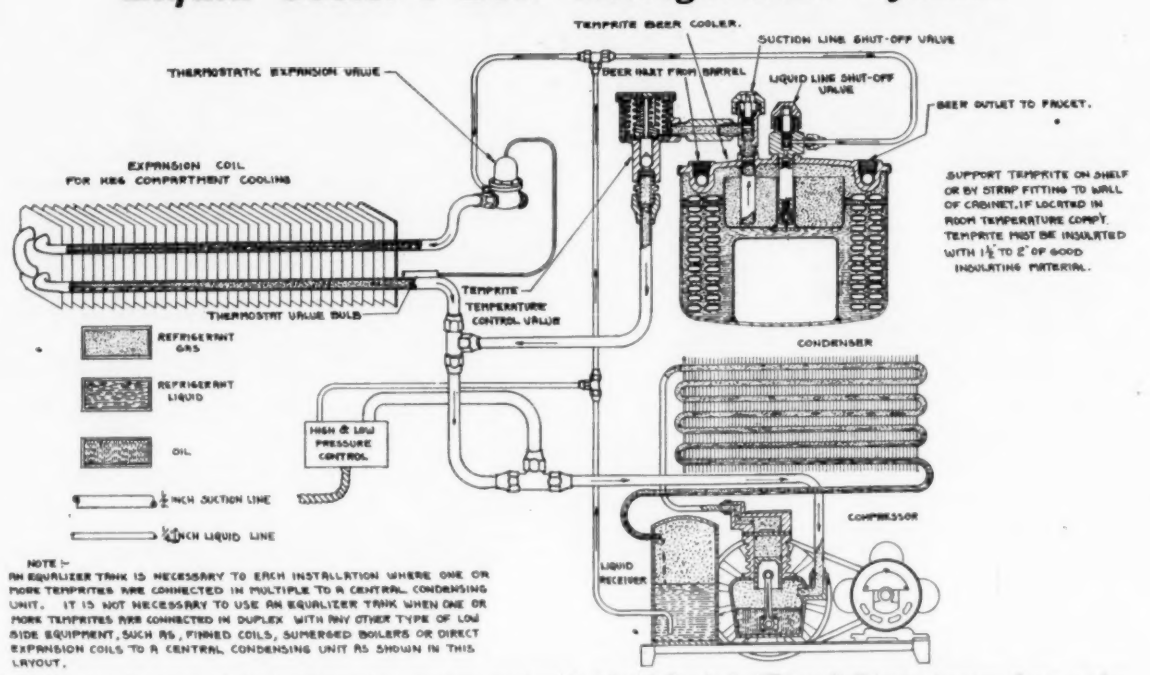
Overall dimensions of the pump are 26½ in. long, 12 in. wide, and 22 in. high. Accessories include an indicating gauge, a relief valve, a drain cock to remove moisture from the tank, and a Schraeder check valve to prevent air from escaping the tank during "off" periods.

PLUNGER PUMP DESIGNED BY WATER APPLIANCE CO.

MILWAUKEE—The Water Appliance Co., manufacturer of pump machinery, has introduced the "Waco" beer pump for use in beer cooling installations.

The Waco pump is of the pioneer plunger type, and has been equipped with a number of devices to keep the air tank free from oil.

Liquid Cooler's Beer Refrigeration System



Schemmatic diagram of the refrigeration system used with Liquid Cooler's "Temprite" instantaneous beer cooler.

SCHAEFER PUMP HANDLES SIX BEER KEGS AT ONCE

MINNEAPOLIS — A beer pump which has a capacity sufficient to maintain proper pressure on six kegs of beer simultaneously has been introduced by Harold Schaefer, Inc., of this city, which also manufactures beer coolers.

The Schaefer beer pump is 30 in. long, 12 in. wide, and 19 in. high. Its weight is 75 lbs. It is powered by a ¼-hp. Wagner motor, available for a.c. or d.c. current.

The tank is equipped with a Penn switch which cuts in automatically at 15 lbs. and out at 25 lbs. It is also equipped with a safety valve.

Air pumped through the tank passes through a fine chromium-plate brass wire mesh screen filter which removes dust and dirt from air delivered to the beer.

DETROIT LUNCH INSTALLS LIQUID CARBONIC COOLER

DETROIT — Louis Christopoulos, proprietor of the Ambassador Lunch, in the heart of downtown Detroit, has installed a 3-tap Liquid Carbonic draft-beer dispensing cabinet, equipped with two Liquid-Zahm pressure-type coolers, surrounded by Frigidaire coils. A Frigidaire compressor furnishes the necessary refrigeration.

His bartender is getting 215 glasses out of every half barrel, the proprietor declares.

Since the advent of legal beer in Michigan, business at the Ambassador Lunch (in terms of dollar volume) has increased 25 per cent, Mr. Christopoulos declares. The afternoon "drop-in" trade in particular has shown a marked increase, he says.

TWO BEER PUMPS BUILT BY QUINCY COMPRESSOR CO.

QUINCY, Ill.—Automatic beer pumps in two sizes are being manufactured by the Quincy Compressor Co. of this city.

The DAX special is designed for mounting in portable bars or draft beer dispensing cabinets. The air receiver has a capacity of 1 gal. It measures 23 in. long, 12 in. wide, and 14 in. high.

The AX-16 has an air receiver with 20 gal. capacity and is designed for installations where larger units are required. It is 34 in. long, 15 in. wide, and 29 in. high.

DIRECTORY

OF BEER PUMP MANUFACTURERS

Binks Mfg. Co.
3114 N. Carroll Ave., Chicago, Ill.

Brunner Mfg. Co.
1821 Broad St., Utica, N. Y.

Curtis Pneumatic Machinery Co.
1912 Kienlen Ave., St. Louis, Mo.

Dayton Air Compressor Co.
Valley & Air Sts., N. Dayton, Ohio

Dayton Pump & Mfg. Co.
500 Webster St., Dayton, Ohio

DeVilbiss Co.
300 Phillips Ave., Toledo, Ohio

Heil Co.
3000 W. Montana St., Milwaukee, Wis.

Jiffe Co.
Holmesburg, Philadelphia, Pa.

Kraissl Co.
620 Main St., Hackensack, N. J.

Monroe Refrigeration & Engineering Co.
41 Clinton St., Brockport, N. Y.

Oberdorfer Brass Co., M. L.
Syracuse, N. Y.

Quincy Compressor Co.
160 Maine St., Quincy, Ill.

Harold L. Schaefer, Inc.
1620 Harmon Place, Minneapolis, Minn.

E. C. Schleyer Pump Co.
Anderson, Ind.

Water Appliance Co.
605 N. Second St., Milwaukee, Wis.

THREE TYPES OF PUMPS PRODUCED BY DEVILBISS

TOLEDO—A line of beer pumps for the dispensing of draft beer has been announced by the DeVilbiss Co. of this city. The pump is adaptable to either portable or stationary service fixtures.

DeVilbiss beer dispensing equipment includes three types of beer pumps. Models are furnished with or without an air tank. A ¼-hp. electric motor may be operated direct from a light socket.

A pressure switch automatically starts the motor and air compressor when the pressure in the tank drops to 40 lbs. When the pressure reaches 60 lbs., the switch cuts off the power and stops the motor.

850 ADDED TO FULL-TIME FORCE BY BRUNSWICK

MUSKEGON, Mich.—Addition of 450 persons to the payroll, with 400 formerly employed as part-time workers now on a full-time basis, has been necessitated in the Brunswick-Balke-Collender factory here by an increasing demand for beer dispensing equipment, bars, and other furniture, according to J. O. Matteson, plant manager.

Man hours per week have been increased about five times, with a total of 850 workers all employed full-time or overtime.

LIQUID COOLER PREPARES BIG CHART OF OPERATION

DETROIT—A large wall chart, in colors, demonstrating in detail the operation of Temprite beer coolers in multiple hook-up, has been prepared by Liquid Cooler Corp. for use by manufacturers and distributors handling the Temprite cooler in conducting schools for their salesmen on this beverage cooler.

OBERDORFER BRINGS OUT BEER COOLER PARTS

SYRACUSE,N. Y.—The M. L. Oberdorfer Brass Co. here, manufacturer of bronze and aluminum products, is introducing a line of New York type bronze beer bungs and draught tubes, with valves tested to 35 lbs. pressure against leakage, tapping irons and wrenches.

HEIL CO. INTRODUCES TWO NEW ROTARY BEER PUMPS

MILWAUKEE—The Heil Co. of this city has introduced a beer pump which is claimed to provide sufficient compressed air to permit flow of 10 gal. of beer per minute at the draft arms.

The Heil pump is available in two models; one with ½ cu. ft. air storage tank has reserve pressure sufficient to pump 2 gal. of beer before compressor starts; other with 1½ cu. ft. air storage tank has reserve pressure sufficient to pump 6 gal. of beer before compressor starts.

A ¼-hp. motor is used to drive the rotary type compressor which the Heil pump employs. An automatic switch maintains air pressure in air storage tank between 15 and 25 lbs. The unit can be manually operated if desired.

Proper Methods of Beer Cooling Described By Dolison

DETROIT—A guide to proper methods of cooling and dispensing beer has been written by D. H. Dolison, sales manager of Liquid Cooler Corp., manufacturer of Temprite beverage coolers, for use by salesmen of distributors selling the Temprite cooler.

Main subject headings in the pamphlet prepared by Mr. Dolison are pre-prohibition methods, original method of cooling by electric refrigeration, the Temprite system, the proper cooling and dispensing of beer, foam control, and cleaning of beer coils.

The pamphlet is designed to serve as an outline for selling instantaneous coolers and as a matter of education for salesmen.

Nashville Chair Co. to Distribute Majestics

NASHVILLE, Tenn. — Nashville Chair Co., wholesale furniture and supply firm here, has been appointed Majestic distributor in central Tennessee, according to John F. Ditzell, assistant vice president and general sales manager of Grigsby-Grunow Co.

R. W. Turnley is president and W. H. Morrison is vice president.

AIRPLANES BRING SWITCHES TO NORGE FACTORY

MUSKEGON, Mich.—Capacity operation of Norge Corp. here has necessitated speeding up of the Kohler Aviation Corp. air line between Milwaukee and Muskegon to make delivery of electric switches used on Norge refrigerators and Economaid washing machines.

The shipments of switches, ranging in weight from 112 to 303 lbs. each, are shipped from Milwaukee via the Railway Express Agency air division, and are ferried three times daily in the Kohler amphibian express plane across Lake Michigan.

PARKER RUST-PROOF SELLS 480,000 LBS. IN MAY

DETROIT—May sales of Parker Rust-Proof Co., manufacturer of rust-proofing compounds, made that month the third largest in the history of the company, according to G. E. Luke, sales manager.

Sales during the month totaled 480,000 lbs. of rust-proofing products, Mr. Luke says, as compared with 220,000 lbs. during the corresponding month of last year, and with 320,000 lbs. in April of this year.

LEITNER SERVICE PORT-A-BAR

To the refrigeration trade! Here is a compact bar to meet present day requirements of cooling and dispensing draft and bottled beer. It has stein and glass washing facilities! Hot and cold water! Draft beer and drinking water! It is the only complete bar of its kind on the market today that serves economically, and is a beautiful fixture as well.

The Leitner line of beer cooling equipment is complete for every draft beer-cooling requirement.

We can give immediate service to refrigeration dealers and distributors on the Leitner beer cooling line. All of the equipment being manufactured for mechanical refrigeration. Coils and valve can be furnished if wanted and everything is so arranged that the refrigeration service man makes his two connections to the ice machine to complete the installation.

Write today for literature on the Leitner Bar Equipment built for mechanical refrigeration

M. Leitner & Co.
2322-24 Ogden Ave., Chicago, Ill.

TEMPRITE »»»
The Original Instantaneous Cooler
The most complete line of BEER, BEVERAGE and WATER COOLERS
LIQUID COOLER CORPORATION
DETROIT MICHIGAN

SPECIFICATIONS

OF DRAFT AND BOTTLE BEER COOLERS

Notice: Copyrighted, all rights reserved.

Specifications of 47 makes of draft-beer dispensing equipment and 15 makes of bottled-beer coolers are printed on this and succeeding pages.

Information about the equipment includes data on dimensions, capacities, method of cooling, and parts used in the assembled piece of equipment.

The descriptive paragraph at the beginning of each compilation of data is designed to give the readers a general idea of the type of equipment that is being offered by the manufacturer. The term "bar assembly" is used to indicate a fixture complete with sinks, bar furniture, etc., at which patrons may be served.

The cooling units are rated in capacities based upon a 10° F. or a 15° F. temperature difference between entering beer and the beer which leaves the spigot.

DRAFT COOLERS

ACORN OPALITE

Acorn Opalite Metal Specialties Co.
1052 W. Monroe St., Chicago, Ill.

Acorn Opalite Metal Specialties Co. is offering a beer cooling and dispensing cabinet in three different lengths for use as a service bar or in bar assemblies. The cabinet is standard with a dry-storage bottle compartment, but may be had without it. The cabinet may be had in any one of the following finishes: Monel metal, porcelain enamel, nickel silver, or stainless steel.

Model No.	1933
OVERALL DIMENSIONS OF ASSEMBLY	
Width (in.)	24-30-36
Depth (in.)	22
Height (in.)	42
CAPACITIES	
Capacity of bottle storage (in 12 oz. bottles)	48-60-72
Capacity of keg compartment (in half barrels)	2
No. of beverage cooling units employed	2
How many beverages can one unit cool simultaneously	1
No. of draft arms	3-4-5
BEVERAGE COOLING UNIT	
Make of beverage cooling unit	Any
Method of cooling employed	Immersion in sweet water bath or in refrigerant
Location of beverage cooling unit	Behind draft arms
REFRIGERATING MACHINE	
Make of machine used	Optional
Where is machine installed	Remote
BOTTLE STORAGE COMPARTMENT	
Does assembly have bottle storage compartment	Yes
Location of compartment	Under draft cooling section
Type of cooling	Dry storage or bottle immersion
INSULATION	
Kind of insulation	Sheet cork
Thickness of insulation	Sides—1 in.; bottom—2 in.
NATURE OF ASSEMBLED UNIT	
Location of barrels	Remote
Is unit portable	No
Can assembly be used as bar	No

ALLIED STORE

Allied Store Utilities Co.
2401 N. Leffingwell, St. Louis, Mo.

Allied Store Utilities Co. is at the present offering a single beer cooling and dispensing unit in a two-keg model, which is large enough to serve as a small bar. It has a top of marbleized rubber, and the exterior is finished in mahogany. Drip pan is of brass, and the draft arm is silver plated.

Model No.	A
OVERALL DIMENSIONS OF ASSEMBLY	
Width (in.)	79
Depth (in.)	36
Height (in.)	45
CAPACITIES	
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°)	30
Capacity of bottle storage (in pt. bottles)	108
Capacity of keg compartment (in half barrels)	2
No. of beverage cooling units employed	1
How many types of beverages can one unit cool simultaneously	1
No. of draft arms	1
BEVERAGE COOLING UNIT	
Make of beverage cooling unit	Own
Method of cooling employed	Immersion of beer coils in sweet water bath
Location of beverage cooling unit	Top inside
REFRIGERATING MACHINE	
Make of machine used	Optional
Where is machine installed	Remote
Refrigerant used	Depends on machine
BOTTLE STORAGE COMPARTMENT	
Does assembly have bottle storage compartment	Yes
Location of compartment	Top center
Type of cooling	Dry storage
INSULATION	
Kind of insulation	Corkboard
Thickness of insulation	4 in.
NATURE OF ASSEMBLED UNIT	
Location of barrels	In ends of assembly
Is unit portable	No
Can assembly be used as bar	Yes

BISHOP & BABCOCK

Bishop & Babcock Sales Co., 4901 Hamilton Ave., Cleveland, Ohio

Bishop & Babcock's line consists of a series of draft beer dispensing sections which can be placed in a bar assembly or used separately. Model 224 has a bottle storage compartment. Exterior construction may be had in either wood or metal, while drip pans and workboard are finished in brass, nickel silver, or stainless steel, as the buyer desires. Draft arms are finished in chromium or nickel plate.

Model No.	34	274	224	121A	121B	121C	121D	133B	133C	133D	133E
OVERALL DIMENSIONS OF ASSEMBLY											
Width (in.)	34	51	74	24	30	36	42	30	36	42	48
Depth (in.)	24½	24½	24½	24	24	24	24	24	24	24	24
Height (in.)	40¾	40¾	41	44	44	44	44	42	42	42	42
CAPACITIES											
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)	14	18	18	13	16	16	16	16	16	16	20
Capacity of keg compartment (half barrels)	2	2	2	...	...	...	...	...	...	...	...
Capacity of bottle cooling compartment (12 oz. bottles)	...	...	48	...	...	...	...	...	...	...	...
No. of beverage cooling units employed	1	1	1	1	1	1	1	1	1	1	1
How many beverages can one unit cool simultaneously	1 to 7, depending on unit										
No. of draft arms	1 to 7, depending on size of dispensing unit										
BEVERAGE COOLING UNIT											
Make of beverage cooling unit	Bishop & Babcock										
Method of cooling employed	Immersion of beer coil in sweet water bath										
Location of beverage cooling unit	Behind draft arm										
BOTTLE STORAGE COMPARTMENT											
Does assembly have bottle storage compartment	Model 224—yes; others—no										
Location of compartment	Beneath drip pan										
Type of cooling	Dry storage										
INSULATION											
Kind of insulation	Sheet cork										
REFRIGERATING MACHINE											
Make of machine used	Optional										
Where is machine installed	Remote										
Refrigerant used	Depends on machine										
Type of temperature control	Thermostatic										
NATURE OF ASSEMBLED UNIT											
Location of barrels	Models 34, 274, 224—within assembly; others—remote										
Is unit portable	Yes										
Can assembly be used as bar	No										

ANHEUSER-BUSCH

Anheuser-Busch, Inc.
Ninth & Arsenal Sts., St. Louis, Mo.

Two of the Anheuser-Busch beer cooling and dispensing fixtures may be classed as complete bars, while the other is a service bar which will fit into a bar assembly. Bottle cooling sections are extra, and may be included with any assembly where desired. The cooling cabinets are finished with Monel metal tops, Ducoed-metal panels, copper workboards, and polished brass draft arms.

Model No.	2-U	2-R	3
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	66¼	49¼	87¾
Depth (in.)	26¼	26½	26½
Height (in.)	45¼	45¼	45¼
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°)	30	30	45
Capacity of keg compartment (in half barrels)	2	2	3
No. of beverage cooling units employed	1	1	2
How many beverages can one unit cool simultaneously	2	2	2
No. of draft arms	1	1	2
Size of refrigerating machine required (hp.)	1/4	1/4	1/3
BEVERAGE COOLING UNIT			
Make of beverage cooling unit	Own		
Method of cooling employed	Immersion of beer coil in sweet water bath		
Location of beverage cooling unit	Behind draft arm		
REFRIGERATING MACHINE			
Make of machine used	Copeland		
Where is machine installed	Model 2-R—remote; others—self-contained		
Refrigerant used	Methyl chloride		
Type of temperature control	Thermostatic		
BOTTLE STORAGE COMPARTMENT			
Does assembly have bottle storage compartment	Can be installed in portable sizes with capacities of 7 or 11 cases, or in standard sizes with capacities of 7, 11, 14, 18, or 22 cases		
NATURE OF ASSEMBLED UNIT			
Location of barrels	Within assembly		
Is unit portable	2R—no; others—yes		
Can assembly be used as bar	Yes		

APEX

Apex Electrical Mfg. Co.
1067 E. 152nd St., Cleveland, Ohio

Apex has developed a line of beer cooling units which are self-contained, that is, complete with the refrigeration unit. They are suitable for installation in any draft beer dispensing cabinet or bar assembly.

Model No.	1-T-25	1-T-33	1-T-50
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	35	35	35
Depth (in.)	15½	15½	15½
Height (in.)	42	42	42
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°)	22½	45	65
Capacity of keg compartment (in half barrels)	1	1	1
No. of beverage cooling units employed	1	1	1
How many beverages can one unit cool simultaneously	2	2	2
No. of draft arms	1	2	3
Size of refrigerating machine required (hp.)	1/4	1/3	1/2
BEVERAGE COOLING UNIT			
Make of beverage cooling unit	Temprite		
Method of cooling employed	Immersion of beer coil in refrigerant by means of concentric coils		
Location of beverage cooling unit	Top inside		
REFRIGERATING MACHINE			
Make of machine used	Apex		
Where is machine installed	Within assembly (self-contained)		
Refrigerant used	Sulphur dioxide		
Type of temperature control	Pressure		
BOTTLE STORAGE COMPARTMENT			
Does assembly have bottle storage compartment	Can be furnished		
NATURE OF ASSEMBLED UNIT			
Location of barrels	Within assembly or remote		
Is unit portable	Yes		
Can assembly be used as bar	If desired		

ALL-STEEL BEER COOLING EQUIPMENT

BY

Seeger

SAINT PAUL

Illustration of Novelty Box No. 2

SEEGER offers the fastest selling line of Modern Beer Cooling Equipment—for immediate shipment.

Every Brewer that has tested these items pronounced them efficient and economical. Here is the opportunity for fast and good profits on the equipment, compressors and coils.

NOVELTY BOXES—All Steel Construction
BOTTLE COOLERS & CHESTS—All Steel Construction
BARREL STORAGE COOLERS—All Steel Construction
MIDGET DISPENSERS—All Steel Construction
DEEP CHEST DISPENSERS—All Steel Construction
COMBINATION COMPRESSOR & BOTTLE BEER COMPARTMENTS—All Steel Construction
SERVICE SINKS—All Steel Construction
COMBINATION SERVICE BARS—All Steel Construction
Mahogany-Walnut or Olive Green Enamel Finishes on Steel
Heavy Insulation
Nothing to Wear out
Nothing to Replace
All Electrically Welded
Heavy—Strong—Durable

WRITE OR WIRE FOR PRICES AND FULL DETAILS

Illustration
Deep Chest Dispenser

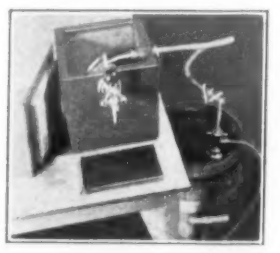


Illustration
Midget Dispenser

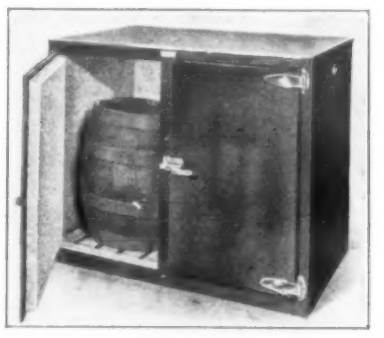


Illustration
Barrel Storage Cooler

SEEGER REFRIGERATOR COMPANY
SAINT PAUL, MINNESOTA

232 Fourth Avenue
Fourth Ave. at 19th St.
NEW YORK, N.Y.

655-57 So. LaBrea Ave.
LOS ANGELES, CAL

666 North Wabash
CHICAGO, ILL.

644 Beacon Street
Kenmore Square
BOSTON, MASS.

BEERCOOLATOR

Quaker Metal Products Co., 2223 N. 28th St., Philadelphia, Pa.

The "Beercoolator" is a draft beer dispensing cabinet available in a number of sizes. Some of the models have a bottle storage compartment, others are self-contained (compressor installed within assembly). The cabinet front is finished in stainless steel, sides, and rear in baked-on enamel. Draft arms are chromium plated.

Model No.	ED-25	E-25	E-33	E-43	L-25	L-33	L-43
OVERALL DIMENSIONS OF ASSEMBLY							
Width (in.)	25	25	33	43	25	33	43
Depth (in.)	26	26	26	26	26	26	26
Height (in.)	42½	42½	42½	42½	42½	42½	42½
CAPACITIES							
No. of draft arms	2	2	3	4-5	2	3	4-5

BEVERAGE COOLING UNIT
Make of beverage cooling unit....Optional
Method of cooling.....Sweet water bath or instantaneous cooler
Location of beverage cooling unit..Behind draft arms

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Bottom of E models can be used for bottle or food storage
Type of cooling.....Dry storage
Make of cooling coil.....Rome

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed....ED and L models—self-contained; others—remote
Type of temperature control.....Optional

INSULATION
Kind of insulation used.....Celotex
Thickness of insulation.....2 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Remote
Is unit portable.....Yes
Can assembly be used as bar.....Yes

BRUNSWICK

Brunswick-Balke-Collender
623 S. Wabash Ave., Chicago, Ill.

The Brunswick-Balke-Collender counter cooler workboard units are all mounted on an angle iron chassis completely assembled and shipped to the buyer to be placed under his present bar or behind one manufactured by Brunswick-Balke-Collender. The assemblies may be had in any size or variation desired, specifications being given on standard assemblies. The assembly has a Monel metal top and workboard, and chrome-plated draft arms. The exterior may be had in mahogany, presdwood, or birch. Brunswick-Balke-Collender is also furnishing bars and backbars of various designs and sizes.

Model No.	6S	8S	4CCB
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	72	96	192
Depth (in.)	28	28	28
Height (in.)	36	36	36
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)..	8	8	30
Capacity of bottle storage (in 12 oz. bottles).....	...	100	200
Capacity of keg compartment (in half barrels).....	2	1	1
No. of beverage cooling units employed	1	1	1
How many beverages can one unit cool simultaneously...	3	3	3
No. of draft arms.....	1	1	2
Size of refrigerating machine required (hp.)	1/4	1/3	3/4

BEVERAGE COOLING UNIT
Make of beverage cooling unit...Temprite
Method of cooling.....Immersion of beer coil in refrigerant by means of concentric coils
Location of beverage cooling unit.....On top of counter

REFRIGERATING MACHINE
Make of machine used.....Kelvinator or Frigidaire
Where is machine installed.....Within assembly (self-contained)
Type of temperature control.....Pressure

INSULATION
Kind of insulation used.....Celotex between Plywood
Thickness of insulation.....3 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Within assembly, beneath dispenser
Is unit portable.....If desired
Can assembly be used as bar.....Yes

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Models 4CCB and 8S yes; other—no
Location of compartment.....In end of cabinets
Make of cooling coil used....Kelvinator or Frigidaire

CARTER

Horace A. Carter
16 E. Marshall St., Richmond, Va.

Carter beer cooling equipment is offered in either beer cooling cabinet, with keg storage compartment, or in coil box styles. Exteriors are of steel, top and workboard of stainless steel, draft arms finished in chrome.

Model No.	1BWR	2BWR	Deep Coil Box
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	28	78	*
Depth (in.)	27	29	...
Height (in.)	47	42	...
CAPACITIES			
Capacity of draft beer dispenser (gal. per hour, 55° to 40°).....	10	20	20
Capacity of bottle storage (in 12 oz. bottles).....	...	72	...
Capacity of keg compartment (in half barrels)	1	2	...
No. of beverage cooling units employed	2	3	2
How many beverages can one unit cool simultaneously ..	1	1	1
No. of draft arms	2	3	2
Size of refrigerating machine required (hp.)	1/3	¼-1/2	...

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Radial
Method of cooling.....Immersion of beer coil in sweet water bath
Location of beverage cooling unit..Behind draft arms

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Remote
Type of temperature control..Thermostatic

INSULATION
Kind of insulation used.....Cork
Thickness of insulation.....2 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Within assembly
Is unit portable .....No
Can assembly be used as bar.....No

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Model 2BWR—yes; others—no
Location of compartment.....Over keg compartment
Make of cooling coil.....Radial

* Coil boxes available in various sizes.

DIREX

Direx Corp.
307 N. Michigan Ave., Chicago, Ill.

The Direx cabinet coolers may be inserted in a bar assembly or used as service bars without additional furniture. Model 2-P has bottle storage space. Serving top is of stainless steel, and exterior finish may be had in either porcelain or stainless steel. Drip pan is of stainless steel with draft arms chromium plated.

Model No.	2-P	B-2
OVERALL DIMENSIONS OF ASSEMBLY		
Width (in.)	83	20
Depth (in.)	32	30
Height (in.)	40	40
CAPACITIES		
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°).....	37.5	37.5
Capacity of bottle storage (in pt. bottles) 105		...
Capacity of keg compartment (in half barrels)	2	...
No. of beverage cooling units employed	2	2
Model No.	2-P	B-2
How many beverages can one unit cool simultaneously	2	2
No. of draft arms	2	2
Size of refrigerating machine required (hp.)	*	*

BEVERAGE COOLING UNIT
Make of beverage cooling unit...Temprite
Method of cooling employed....Immersion of beer coil in refrigerant by means of concentric coils
Location of beverage cooling unit....Top inside

REFRIGERATING MACHINE
Make of machine used.....Kelvinator, Westinghouse or Zerozone
Where is machine installed...In assembly, below beverage cooler, in both models
Refrigerant used.....Depends on machine
Type of temperature control.....Pressure

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment....Model 2-P—yes B-2—no
Location of compartment..End of assembly
Type of cooling.....Dry storage
Kind of insulation.....Celotex
Thickness of insulation.....1¼ in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Model 2-P—within assembly; model B-2—remote
Is unit portable .....No
Can assembly be used as bar..Can be used under bar or as separate fixture

*Depends upon make of machine: Westinghouse, 1/4 hp.; Kelvinator, 1/3 hp.; Zerozone, 1/2 hp.

CONSOLIDATED

Consolidated Equipment Corp., Greenville, Mich.

All of the Consolidated models, with the exception of the two midgets and the "B" cabinet models, will qualify as bars. Bars may be had in any length or any combination of dispensing units, as Consolidated is also making metal bar furniture. Tops and drip pans may be had in either Model metal or stainless steel, exterior panels are finished in porcelain and draft arms in chromium. The midget models are for hotel room service or home use.

Model No.	G1022	Midget 1	Midget 2	B2	B4	D142	D272	F1421	F2722	J1	J2	H1	H2	N2	N4
OVERALL DIMENSIONS OF ASSEMBLY															
Width (in.)	61	24	24	30	44	54¾	81½	81½	129½	44½	67	22	22	22	22
Depth (in.)	29	17	17	29	29	29	29	29	29	27¾	27¾	24	24	30	42
Height (in.)	40¾	43	43	31	31	31	31	42	42	41½	41½	42	42	42	42
CAPACITIES															
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°).....	20	20-30	20-30	20-40	40-60	20-40	20-40	20-40	20-40	...	...	...	...	...	...
Capacity of bottle storage (in pint bottles) 100		96	96	...	...	140	275	140	275	100	100	...	...	...	...
Capacity of keg compartment (in half barrels).....	2	...	...	...	...	...	...	1	2	1	2	...	...	...	...
No. of beverage cooling units employed	2	2	2	2	2	2	2	2	2	1	2	1	2	2	4
How many beverages can one unit cool simultaneously	2	2	2	2	2	2	2	2	2	1	2	1	2	2	4
No. of draft arms.....	2	2	2	2-4	4-6	2-4	2-4	2-4	2-4	1	2	1	2	2	4
Size of refrigerating machine required (hp.)	1/2	1/4	1/3	1/2	3/4	3/4	1	1	1-1/2	1/3	1/2	1/4	1/4	1/3	1/2

BEVERAGE COOLING UNIT
Make of beverage cooling unit....Consolidated, Temprite, Frigidaire, or Zahm
Method of cooling employed....Immersion of beer coil in sweet water bath

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Midget 1 model—self-contained; others—remote
Refrigerant used.....Depends on machine

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Models B2, B4, H1, H2, N2, & N4—no; others—yes
Location of compartment.....Top
Type of cooling..Plate-type evaporator, beer is cooled by direct contact with plate

NATURE OF ASSEMBLED UNIT
Location of barrels..Models G1022, F1421, F2722, J1, & J2—within assembly; others—remote
Is unit portable.....Midget 1 model—yes; others—no
Can assembly be used as bar.....Midget J1, & J2 models—no; others—yes

INSULATION
Kind of insulation.....Corkboard
Thickness of insulation....J1 & J2—1 in.; H1, H2, N2, & N4—1½ in.; others—2 in.
Thickness of insulation.....2 in.

ESCO

Esco Cabinet Co., West Chester, Pa.

Model DB-2 in the Esco line is a draft beer dispensing unit that can be placed in a bar assembly, or used merely as a dispenser for glass beer. Model DB-1 is 24 in. high for placing on counter, in bar, or on the back bar. All other Esco draft beer dispensers are in combination with bottle beer coolers. The DM series have wet storage for bottles only, but DMS models have both dry and wet storage compartments. Exteriors of these assemblies are of metal, finished in green, while tops are of special composition material. Drip pan, draft arm, and trim are finished in bright metal.

Model No.	DB 1	DB 2	DM 96	DM 192	DM 2-192	DMS 96	DMS 192	DMS 2-192
OVERALL DIMENSIONS OF ASSEMBLY								
Width (in.)	28	28	51	73½	73½	51	73½	73½
Depth (in.)	25	25	25	29	29	25	29	29
Height (in.)	24	43	36	36	36	36	36	36
CAPACITIES								
Capacity of bottle storage compartment (12 oz. bottles)	...	...	60	120	108	36	96	84
No. beverage cooling units employed	1	1	2	2	3	2	2	3
How many beverages can one unit cool simultaneously	1	1	1	1	2	1	1	2
No. of draft arms	1	1	1	1	2	1	1	2
Size of refrigerating machine required (hp.)	...	...	1/3	1/2	1/2	1/3	1/2	1/2

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Own
Method of cooling employed....Immersion of beer coil in sweet water bath
Location of beverage cooling unit..Behind draft arm

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Remote

INSULATION
Thickness of insulation.....3 in., bottom; 2 in., sides and ends

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Models DB-1 and DB-2—no; others—yes
Location of compartment....DM models—one wet storage bottle compartment; DMS models—one wet storage and one dry storage compartment

NATURE OF ASSEMBLED UNIT
Location of barrels.....Remote
Is unit portable.....No
Can assembly be used as bar.....No

DAYTON

Dayton Pump & Mfg. Co., Dayton, Ohio

The Dayton beer cooler is a portable draft beer dispenser with refrigerating machine located in the top of the cabinet. Exterior is of sheet steel finished in white lacquer. Drip pan is of copper, draft arm is chromium plated.

Model No.	R-2700
OVERALL DIMENSIONS OF ASSEMBLY	
Width (in.)	26
Depth (in.)	26
Height (in.)	54
CAPACITIES	
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°).....	6
Capacity of keg compartment (in half barrels).....	1
No. of beverage cooling units employed	1
How many beverages can one unit cool simultaneously	1
No. of draft arms	1
Size of refrigerating machine required (hp.)	1/4

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Dayton
Method of cooling.....Immersed in sweet water bath
Location of beverage cooling unit..Top of cabinet

REFRIGERATING MACHINE
Make of machine used.....Dayton
Where is machine installed..Top of cabinet
Make of temperature control.....Cutler-Hammer
Refrigerant used.....Sulphur dioxide

INSULATION
Kind of insulation used.....Balsam Wool
Thickness of insulation.....2 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....In assembly
Is unit portable.....Yes
Can assembly be used as bar.....No

CRANE

Crane Co., St. Paul, Minn.

Crane Co. is offering a self-contained bar, with bottle storage, keg section, and cleaning sections as integral parts of the equipment. Bar top is of linotile and exterior of Masonite prestwood. Drip pan and sink are finished in stainless steel and draft arms are chromium plated.

Model No.	KHA
OVERALL DIMENSIONS OF ASSEMBLY	
Width (in.)	76
Depth (in.)	28
Height (in.)	41
CAPACITIES	
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°).....	15
Capacity of bottle storage (in pt. bottles	60
Capacity of keg compartment (in half barrels)	2
No. of beverage cooling units employed	1
How many beverages can one unit cool simultaneously	2
No. of draft arms	1
Size of refrigerating machine required (hp.)	1/3

BEVERAGE COOLING UNIT
Make of beverage cooling unit...Temprite
Method of cooling employed....Immersion of beer coil in refrigerant by means of concentric coils
Location of beverage cooling unit....Top inside

REFRIGERATING MACHINE
Make of machine used .....Mayflower
Where is machine installed.....Within assembly (self-contained)
Refrigerant used .....Methyl chloride
Type of temperature control.....Pressure

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment .....Yes
Location of compartment.....Above keg compartment
Type of cooling .....Dry storage
Kind of insulation .....Cork
Thickness of insulation .....2 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Within assembly
Is unit portable .....No
Can assembly be used as bar..Yes

FRANTZ

Frantz Refrigeration Co.
214 Penn St., Reading, Pa.

The Frantz standard model is a complete bar, with cooling sections and workboards. Bar top is of oak and exterior of porcelain on steel. Drain, workboards, and trim are of metal finished in German silver, with draft arms finished in chromium. Other two models are beverage cooling sections only, drip pan and draft arms finished in same style as the Standard model.

Model No.	STD.	6-BB	610	6103
OVERALL DIMENSIONS OF ASSEMBLY				
Width (in.)	...	30¾	26¾	26¾
Depth (in.)	24	34½	19¼	19¼
Height (in.)	42½	34½	42	42
CAPACITIES				
No. of beverage cooling units employed	1	1	1	1
How many beverages can one unit cool simultaneously	2	2	2	3
No. of draft arms	2	2	2	3

BEVERAGE COOLING UNIT
Make of beverage cooling unit....Frantz
Method of cooling.....Immersion
Location of beverage cooling unit..Behind draft arms

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Remote
Type of temperature control..Thermostatic

INSULATION
Kind of insulation used.....Corkboard
Thickness of insulation.....2 in.

NATURE OF ASSEMBLED UNIT
Is unit portable .....No
Can assembly be used as bar....Standard model—yes; others—no

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment .....No

CRUSE

Cruse Refrigerator Co., Louisville, Ky.

Cruse Refrigerator Co. in addition to its beer cooling and dispensing cabinets, is offering a line of bar furniture for complete assemblies, with top finishes in wood, hard rubber, or bakelite and exterior finishes in wood or porcelain. The dispensing boxes may be had in wood or metal construction, with copper drip pan and polished brass draft arms.

Model No.	199	299	99
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	40	80	30
Depth (in.)	32	32	32
Height (in.)	44	44	44
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)..13-27	31-50	8-11	
Capacity of keg compartment (in half barrels)	To order		
No. of beverage cooling units employed	2	4	1
How many types of beverages can one unit cool simultaneously...	1	2	1
No. of draft arms†	2	4	1
Size of refrigerating machine required (hp.)	1/3	1/3	1/3

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Cruse*
Method of cooling employed....Immersion of beer coil in sweet water bath
Location of beverage cooling unit.....Top inside

REFRIGERATING MACHINE
Make of machine used .....Optional
Where is machine installed .....Remote
Refrigerant used.....Depends on machine
Type of temperature control.....Optional

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment .....If desired

INSULATION
Kind of insulation.....Corkboard
Thickness of insulation.....2 & 3 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Remote
Is unit portable .....Yes
Can assembly be used as bar....If desired

*Or any type of instantaneous cooler.
†Additional arm for water faucet can be added to any model.

FRIGIDAIRE

Frigidaire Corp., Dayton, Ohio

Frigidaire's "TT" models are beer cooling units only, for application in the draft beer dispensing section of a bar assembly. The dispenser model is a complete draft beer dispensing section with exterior and drip pan finished in bright metal and draft arms chromium plated.

Model No.	TT 12-CC	TT 4C	Dispenser
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	14¼	11¼	16¼
Depth (in.)	20¼	16½	23¼
Height (in.)	30	22	44¾
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour)....	38	21	50
No. of beverage cooling units employed	1	1	1
How many beverages can one unit cool simultaneously...	2	1	2
No. of draft arms.....	2	1	2
Size of refrigerating machine required (hp.)	3/4	1/2	3/4

BEVERAGE COOLING UNIT
Make of beverage cooling unit..Frigidaire
Method of cooling employed.....Beer coil immersed in secondary refrigerant in insulated tank
Location of beverage cooling unit.....Top inside

REFRIGERATING MACHINE
Make of machine used.....Frigidaire
Where is machine installed.....Remote
Refrigerant used .....Freon
Type of temperature control.....Pressure

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment .....No

NATURE OF ASSEMBLED UNIT
Location of barrels .....Remote
Is unit portable .....No
Can assembly be used as bar.....No

SCHAEFER'S - - COMBINATION - - COOLER

(*Two draft Cooler with bottle goods Compartment—Capacity 70 pints, 24 quarts*)

Comes to you "Self-Contained" ready to plug in like any household refrigerator.

Increased Production despite higher material costs has enabled us to reduce our prices.

•

We manufacture the most complete line of beer cooling equipment in the country—complete bars, novelty bars, beer pumps, combinations coolers, etc.

•

All equipment available with or without high-sides.

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Write for distributors prices and discounts

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Incorporated
1620 Harmon Place
Minneapolis Minnesota

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Cooling Coils for Every Purpose
Over 150 installations at A Century of Progress Exposition, CHICAGO

The approved beer coil! Draught, bottle or barrel compartment coils. Submerged or exposed surface.

Patents Pending

COMMERCIAL COIL & REFRIGERATION CO.
455 N. Artesian Ave., Chicago, Ill.

FEDDERS

Fedders Mfg. Co., Inc., 57 Tonawanda St., Buffalo, N. Y.

Fedders' cabinet-type beer coolers and dispensers can fit into a counter line or can be placed in any convenient space and be put into operation. There is a choice in the exterior between walnut and mahogany. Drip pan and draft arms have polished brass finish. Included in the Fedders line is the "Mobile" bar, a self-contained electrically refrigerated model with keg and bottle compartments.

Model No.	R125L	R133L	R150L	R175L	R1100L	R225L	R233L	R250L	RW225L	RW233L	RW250L	SC125	MT50	CCB1L	RCB125L
OVERALL DIMENSIONS OF ASSEMBLY															
Width (in.)	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	46	16½	15⅛
Depth (in.)	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	15⅛	27	17½	15⅛
Height (in.)	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	40½	42	35	20
CAPACITIES															
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)	7.5	11	16	21.8	30	16	21.8	30	16	21.8	30	7.5	6	7.5	7.5
Capacity of bottle storage (in 12 oz. bottles)	...	...	...	...	...	...	...	...	...	...	...	...	24	...	...
Capacity of keg compartment (in half barrels)	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
No. beverage cooling units employed	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
How many beverages can one unit cool simultaneously	1	1	1	1	1	2	2	2	3	3	3	1	1	1	1
No. of draft arms	1	1	1	1	1	2	2	2	3	3	3	1	1	1	1
Size of refrigerating machine required (hp.)	1/4	1/3	1/2	3/4	1	1/2	3/4	1	1/2	3/4	1	1/4	1/3-½	1/4	1/4

* * *

BEVERAGE COOLING UNIT
Make of beverage cooling unit....Fedders
Method of cooling.....Direct coil to coil
Location of beverage cooling unit...Model MT-50—in bottle cooling compartment; others—top of cabinet

REFRIGERATING MACHINE
Make of machine used.....Model SC-125—Fedders; others—optional
Where is machine installed.....Models SC-125 and MT-50—base of cabinet; others—remote
Type of temperature control.....Model MT-50—thermostatic; others—pressure
Refrigerant used .....Model SC-125—sulphur dioxide

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Model MT-50—yes; others—no
Location of compartment...End of cabinet
Make of cooling coil.....Fedders

INSULATION
Kind of insulation used....Model MT-50—Celotex; others—mineral wool
Thickness of insulation....Model MT-50—1½ and 2 in.; others—3 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Model MT-50—end of cabinet; others—remote
Is unit portable.....Model MT-50—yes; others—no
Can assembly be used as bar.....Model MT-50—yes; others—no

FILTRINE

Filtrine Mfg. Co.
53 Lexington Ave., Brooklyn, N. Y.

Filtrine beer cooling and dispensing cabinets are designed to stand at the end of a counter in restaurants, etc., and as bar inserts. Five different kinds of beverages can be dispensed from all models. Model B-WS has dry storage bottle compartment. Tops of the cabinets are of stainless steel, as is the draught tray. Exterior finish is regularly white porcelain, but can be furnished in Monel metal, stainless steel, galvanized iron or wood. Draft arms are chromium.

Model No.	2B-WS	2B-WM	2B-W
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	40	40	40
Depth (in.)	27	27	27
Height (in.)	42	42	21
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)	15	15	15
Capacity of bottle storage (in 12 oz. bottles)	96	...	...
No. of beverage cooling units employed	2	2	2
How many beverages can one unit cool simultaneously	1	1	1
No. of draft arms	2-5	2-5	2-5
Size of refrigerating machine required (hp.)	1/2	1/3	1/3

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Filtrine
Method of cooling employed....Immersion of beer coil in sweet water bath
Location of beverage cooling unit.....Top inside

REFRIGERATING MACHINE
Make of machine used .....Optional
Where is machine installed.....Model 2B-WM—self-contained; others—remote
Type of temperature control..Thermostatic

INSULATION
Kind of insulation used.....Cork
Thickness of insulation.....2 in.

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment..Model 2B-WS—yes; others—no
Location of compartment.....In bottom
Type of cooling.....Dry storage
Make of cooling coil.....Fedders

INSULATION
Kind of insulation.....Corkboard
Thickness of insulation.....2 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Remote
Is unit portable.....If desired
Can assembly be used as bar.....Model 2B-W—no; others—yes

ED. FRIEDRICH

Ed. Friedrich
1117 E. Commerce St., San Antonio, Tex.

Ed. Friedrich beer cooling equipment consists of three models, two of which are complete bars, with the other serving as a section for a bar assembly. The bar models are finished in mahogany, with frosted steel drip pans and chromium-plated draft arms.

Model No.	Upright	Super Buckhorn
OVERALL DIMENSIONS OF ASSEMBLY		
Width (in.)	54	72 62
Depth (in.)	34	26 30
Height (in.)	88	50½ 42
CAPACITIES		
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)	30	30 30
Capacity of bottle storage (in 12 oz. bottles)	72	... ...
Capacity of keg compartment (in half barrels)	2	2 2
How many beverages can one unit cool simultaneously	1	1 1
No. of beverage cooling units employed	2	2 2
No. of draft arms	2	2 2
Size of refrigerating machine required (hp.)	1/2	1/3 1/3

BEVERAGE COOLING UNIT
Make of beverage cooling unit...Friedrich
Method of cooling employed....Immersion of beer coil in sweet water bath
Location of beverage cooling unit.....Top inside

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Remote
Refrigerant used.....Depends on machine

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Upright model—yes; others—no
Location of compartment.....Above barrel compartment
Type of cooling.....Dry cooling

INSULATION
Kind of insulation.....Sheet cork
Thickness of insulation.....2 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.In bottom of assembly
Is unit portable.....Yes
Can assembly be used as bar...Upright & Buckhorn models—yes; Super model—no

FEDERAL

Federal Store Equipment, Inc.
W. St. Paul Ave. at 10th St., Milwaukee, Wis.

Federal's beer cooling and dispensing equipment consists of a combination service bar designed especially for small taverns and roadside stands. It has both keg and bottle storage compartment. A choice of wood or metal construction is offered, with tops of either heavy wood or stainless steel. Drip pan is of stainless steel and draft arms are chromium plated.

Model No.	De Luxe 1
OVERALL DIMENSIONS OF ASSEMBLY	
Width (in.)	80
Depth (in.)	32
Height (in.)	42
CAPACITIES	
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°)	30
Capacity of bottle storage (in pt. bottles)	72
Capacity of keg compartment (in half barrels)	2
No. of beverage cooling units employed	2
How many beverages can one unit cool simultaneously	1
No. of draft arms	2

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Federal
Method of cooling employed....Immersion of beer coil in sweet water bath
Location of beverage cooling unit....Top inside

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Remote

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Yes
Location of compartment.....End
INSULATION
Kind of insulation.....Corkboard
Thickness of insulation.....2 in.

NATURE OF ASSEMBLED UNIT
Location of barrels....In end of assembly
Is unit portable .....No
Can assembly be used as bar.....Yes

FOGEL

Fogel Refrigerator Co.
519-523 Bainbridge St., Philadelphia, Pa.

In addition to the beer cooling and dispensing cabinets listed below for bar assemblies, Fogel Refrigerator Co. is making complete service bars with wood or porcelain exteriors, workboard, and sink, in any length desired. The beer cooling cabinets are finished in copper, brass, porcelain, or stainless steel. Drip pan is of stainless steel and draft arms are finished in polished brass or chromium, as desired.

Model No.	220	330	440
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	24	36	48
Depth (in.)	22	24	24
Height (in.)	42	42	42
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°)	10	15	20
Capacity of bottle storage (in pt. bottles)	...	100	175
Capacity of keg compartment (in half barrels)	0	0	2
No. of beverage cooling units employed	2	2	5
How many beverages can one unit cool simultaneously	1	1	1
No. of draft arms	2	2	5

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Own
Method of cooling employed....Immersion of beer coil in sweet water bath
Location of beverage cooling unit...Center of assembly, under draft arms

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Remotely
Type of temperature control..Thermostatic

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.Model 220—no; others—yes
Location of compartment.....In base of assembly
Type of cooling.....Direct expansion copper coil

INSULATION
Kind of insulation.....Sheet cork
Thickness of insulation.....2 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Remote
Is unit portable.....No
Can assembly be used as bar.....No

GREEN

Robert M. Green & Sons, Philadelphia, Pa.

Draft beer dispensers made by Robert M. Green & Sons are designed as service bars, or to fit in bar assemblies. One of the models has space for keg storage. Exterior and workboard are finished in stainless steel, draft arms are chromium plated.

Model No.	UL-1	UL-2	UL-4	92	93
OVERALL DIMENSIONS OF ASSEMBLY					
Width (in.)	54	102	150	24-48	36-60
Depth (in.)	32½	32½	32½	27	27½
Height (in.)	42	42	42	20-44	40-44
CAPACITIES					
Capacity of keg compartment (in half barrels)	1	2	4	...	...
No. of beverage cooling units employed	1	2	4	2	2
How many beverages can one unit cool simultaneously	1	1	1	1	1
No. of draft arms	1	2	4	2	2
Size of refrigerating machine required hp.	1/3-¾	1/3-¾	1/3-¾	1/3-¾	1/3¾

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Patent interwoven coil
Method of cooling....Immersion in sweet water bath
Location of beverage cooling unit..Behind draft arms

REFRIGERATING MACHINE
Make of machine used .....Optional
Where is machine installed.....Remote
Type of temperature control..Thermostatic

INSULATION
Kind of insulation used.....Cork

NATURE OF ASSEMBLED UNIT
Location of barrels ...Models UL-1, UL-2, UL-4—ends; others—remote
Is unit portable.....No
Can assembly be used as bar.....Models UL-1, UL-2, UL-4—yes; others—no

HERRICK

Herrick Refrigerator & Cold Storage Co.
Waterloo, Iowa

Herrick cabinet coolers may be used as bars, or as part of a bar assembly. One model has a bottle storage compartment.

Model No.	K62	520
OVERALL DIMENSIONS OF ASSEMBLY		
Width (in.)	51	51
Depth (in.)	24¾	27½
Height (in.)	41	43¼
CAPACITIES		
Capacity of bottle storage (in pt. bottles)	...	52
Capacity of keg compartment (in half barrels)	2	2
No. of beverage cooling units employed	2	2
How many beverages can one unit cool simultaneously	1	1
No. of draft arms	2	2

BEVERAGE COOLING UNIT
Make of beverage cooling unit....Herrick
Method of cooling employed....Immersion
Location of cooling unit.....Top inside

REFRIGERATING MACHINE
Make of machine used .....Optional
Where is machine installed.....Remote

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Model 520—yes; model K62—no
Location of compartment..End of assembly
Type of cooling.....Dry storage

INSULATION
Kind of insulation.....Cork & Dry-Zero

NATURE OF ASSEMBLED UNIT
Is unit portable .....No
Can assembly be used as bar.....Yes

HOLCOMB & HOKE

Holcomb & Hoke Mfg. Co., 1545 Van Buren St., Indianapolis, Ind.

Holcomb & Hoke beer cooling and dispensing cabinets are designed primarily as bar inserts. Exterior finish is pine, with copper workboard, and nickel-plated bronze hardware.

Model No.	224	330	436	101	10	50
OVERALL DIMENSIONS OF ASSEMBLY						
Width (in.)	24	30	36	39	74	78
Depth (in.)	25	25	25	30	30	30
Height (in.)	42	42	42	42	42	48
CAPACITIES						
Capacity of keg compartment (in half barrels)	...	...	...	1	2	2
No. of draft arms	2	3	4	1	2	2

* * *

BEVERAGE COOLING UNIT
Make of beverage cooling unit...Optional
Method of cooling.....Immersion of coil in sweet water bath
Location of beverage cooling unit..Behind draft arms

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Remote

INSULATION
Kind of insulation used.....Temlok
Thickness of insulation.....2-2½ in.

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment....Models 101, 10, 50—yes; others—no
Location of bottle storage compartment.....Above barrel storage compartment

NATURE OF ASSEMBLED UNIT
Location of barrels.....Models 101, 10, 50—in assembly; others—remote
Can assembly be used as bar.....Models 101, 10, 50—yes; others—no

FROZ-EL

Weber Showcase & Fixture Co., Inc.
5700 Avalon Blvd., Los Angeles, Calif.

Weber Showcase & Fixture Co., in addition to beer cooling and dispensing cabinets of the conventional type, has designed a combination draft beer dispenser and bottle storage cooler along the lines of a reach-in commercial refrigerator. The draft beer section is in what would be the top middle section of a six-compartment commercial refrigerator.

Model No.	B-457	B-465	B-461
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	58	62	26*
Depth (in.)	28	31	24
Height (in.)	41	90	40½
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)	16	16	16
Capacity of bottle storage (in 12 oz. bottles)	...	168	62
Capacity of keg compartment (in half barrels)	2	2	...
No. of beverage cooling units employed	1	1	1
How many beverages can one unit cool simultaneously	2	2	2
No. of draft arms	2	2	2
Size of refrigerating machine required (hp.)	1/4	1/3	1/4

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Weber
Method of cooling.....Immersion of coil in sweet water bath
Location of beverage cooling unit...Model B-461—bottom; others—behind draft arms

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Remote
Type of temperature control.....Optional

INSULATION
Kind of insulation used.....Sheet cork
Thickness of insulation.....Model B-465—3 in.; others—2 in.

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment..Models B-465, B-461—yes; other—no
Location of bottle storage compartment.....Model B-465—top and bottom; model B-461—bottom
Make of cooling coil.....Weber

NATURE OF ASSEMBLED UNIT
Location of barrels..Model B-461—remote; others—in base of assembly
Is unit portable .....No
Can assembly be used as bar.....Model B-457—yes; others—no

*B-461 can be furnished in any length desired with number of draft arms required.

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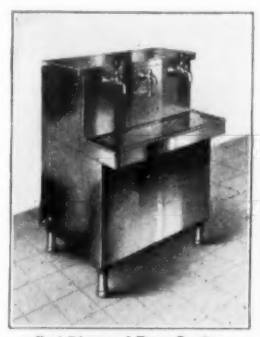
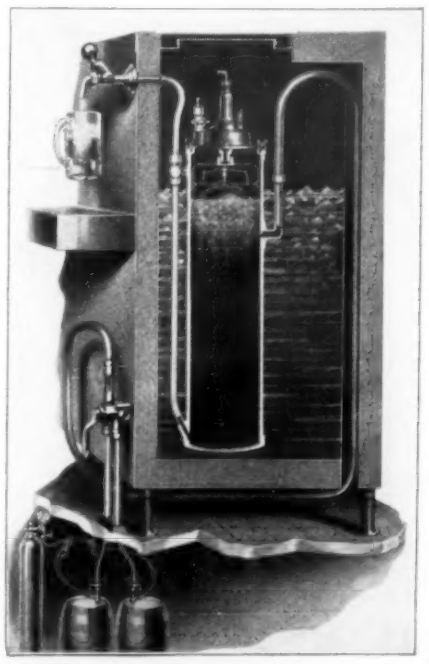
RED DIAMOND CARBONIC GAS
COMPLETE MODERN BARS


Red Diamond Beer Cooler for Two or Three Coils


Red Diamond Beer Cooler and Dispenser for Four Coils


Red Diamond Beer Service Bar for Two-Half Barrels. Wood (as shown) or Stainless Steel


Red Diamond Beer Service Bar for One-Half Barrel



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HILL

C. V. Hill & Co., Trenton, N. J.

C. V. Hill & Co., in addition to the two complete service bar models listed below, is designing furniture in any size or design desired.

Model No.	HB-2	HB-4
OVERALL DIMENSIONS OF ASSEMBLY		
Width (in.)	72	120
Depth (in.)	32	32
Height (in.)	50	50
CAPACITIES		
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°)	15-75	15-75
Capacity of keg compartment (in half barrels)	2	4
No. of beverage cooling units employed	1	1
How many beverages can one unit cool simultaneously	3	3
No. of draft arms	2	2

BEVERAGE COOLING UNIT
Make of beverage cooling unit....Temprite
Method of cooling employed....Immersion of beer coil in refrigerant by means of concentric coil arrangement
Location of beverage cooling unit...Below the bar

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Remotely
Type of temperature control.....Optional

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Keg compartment can be used for bottles where desired
Location of compartment.....Ends
Type of cooling.....Dry storage with fin-type coils

INSULATION
Kind of insulation.....Corkboard
Thickness of insulation.....2½ in.

NATURE OF ASSEMBLED UNIT
Location of barrels....In ends of assembly
Is unit portable.....No
Can assembly be used as bar.....No

KOCH

Koch Butchers' Supply Co.
North Kansas City, Mo.

Koch beer coolers are in the conventional novelty box style, with one model being self-contained. Exteriors are of golden oak, workboard is copper, draft arms are chromium plated.

Model No.	20	22	25	40
OVERALL DIMENSIONS OF ASSEMBLY				
Width (in.)	72	72	72	72
Depth (in.)	28¾	28¾	28¾	28¾
Height (in.)	43	43	43	43
CAPACITIES				
Capacity of keg compartment (in half barrels)	2	2	2	2
No. of draft arms	2	2	2	2

BEVERAGE COOLING UNIT
Location of beverage cooling unit..Behind draft arms

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed...Model 22—below draft arms; all others—remote

INSULATION
Kind of insulation used.....Armstrong corkboard
Thickness of insulation.....Bottom—3 in.; sides—2 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Models 20, 25, 40—both ends; model 22—one end
Is unit portable.....No
Can assembly be used as bar.....Yes

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Models 20, 25, 40—yes; others—no
Location of compartment...Cabinet center
Type of cooling.....Sweet water bath

KNIGHT

Knight Soda Fountain Co.
2701 N. Kildare, Chicago, Ill.

Knight's draft beer dispenser comes complete as a bar, being a self-contained unit with keg storage sections in each end. Bar exterior is vertical grained oriental walnut, top is solid African mahogany, draft arms are polished brass or chrome plated. Workboard may be had in brass or stainless steel.

Model No.	102JS50
OVERALL DIMENSIONS OF ASSEMBLY	
Width (in.)	92
Depth (in.)	32
Height (in.)	42
CAPACITIES	
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)	30
Capacity of keg compartment (in half barrels)	2
No. of beverage cooling units employed	1
How many beverages can one unit cool simultaneously	3
No. of draft arms	3
Size of refrigerating machine required (hp.)	¼-1/3

BEVERAGE COOLING UNIT
Make of beverage cooling unit....Mohawk
Method of cooling.....Immersion in sweet water bath

REFRIGERATING MACHINE
Make of machine used.....Mohawk
Where is machine installed.....Remote
Type of temperature control..Thermostatic or pressure
Refrigerant used.....Methyl chloride

INSULATION
Kind of insulation used.....Cork & wood
Thickness of insulation.....1½ in.

NATURE OF ASSEMBLED UNIT
Can assembly be used as bar.....Yes

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....No

MOHAWK

Rudolph Wurlitzer Mfg. Co.
North Tonawanda, N. Y.

A complete draft beer dispensing unit is being manufactured and sold by the Rudolph Wurlitzer Mfg. Co., under the Mohawk trade name. The units employ a Mohawk refrigerating machine and cooling unit.

Model No.	103-C
OVERALL DIMENSIONS OF ASSEMBLY	
Width (in.)	24
Depth (in.)	16
Height (in.)	43
CAPACITIES	
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)	20
No. of beverage cooling units employed	1
How many beverages can one unit cool simultaneously	3
No. of draft arms	3
Size of refrigerating machine required (hp.)	1/3

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Knight
Method of cooling.....Immersion in sweet water bath
Location of beverage cooling unit..Center

REFRIGERATING MACHINE
Make of machine used.....Universal
Where is machine installed...Lower center
Type of temperature control.....Pressure
Refrigerant used.....Methyl chloride

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....No

INSULATION
Kind of insulation used.....Cork
Thickness of insulation.....2 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Ends
Is unit portable.....No
Can assembly be used as bar.....Yes

J. MOSS & SONS

J. Moss & Sons, 78 19th St., Brooklyn, N. Y.

In addition to the beer cooling and dispensing equipment listed below, J. Moss & Sons is supplying bar furniture and complete bar assemblies in oak or mahogany finishes. The cabinet coolers are finished in copper bearing steel or in hardwood.

Model No.	1	2	3	4
OVERALL DIMENSIONS OF ASSEMBLY				
Width (in.)	74	34¾	42	24
Depth (in.)	27½	27¼	24	24
Height (in.)	41	42	42	42
CAPACITIES				
Capacity draft beer dispenser (gal. per hr., 50° to 40°)	30	30	60	30
Capacity of keg compartment (half barrels)	2	...	...	...
No. of beverage cooling units employed	2	2	4	2
How many beverages can one unit cool simultaneously	1	1	1	1
No. of draft arms	2	2	4	2

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Own
Method of cooling employed....Immersion of beer coil in sweet water bath
Location of beverage cooling unit..Behind draft bar

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Model 2—self-contained; others—remote
Type of temperature control..Thermostatic

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....No

INSULATION
Kind of insulation.....Cork
Thickness of insulation.....2½ in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Model 1—within assembly; others—remote
Is unit portable.....No
Can assembly be used as bar....Model 1—yes; others—no

LIBERTY

Liberty Refrigeration Corp.
237 Georgia Ave., Providence, R. I.

All but one of Liberty's line of beer cooling and dispensing units can be used as a bar without the addition of extra bar furniture. Exteriors are of steel, with lacquer or porcelain finish, and bar top is of copper or nickel silver, with the same choice of metals for the drip pan. Draft arms can be had in polished brass, nickel, or chromium finish.

Model No.	Barette	32	52	S-52	82	S-82
OVERALL DIMENSIONS OF ASSEMBLY						
Width (in.)	26	36	60	60	96	96
Depth (in.)	35	28	28	28	32	32
Height (in.)	55¾	42	42	42	44	44
CAPACITIES						
Capacity of draft beer dispenser (in gal. per hour, 20° cooling)	11.5	11.5	11.5	11.5	15	15
Capacity of bottle storage (in 12 oz. bottles)	...	...	...	96	...	192
Capacity of keg compartment (in half barrels)	...	...	...	...	...	2
No. of beverage cooling units employed	1	1	1	1	1	1
How many beverages can one unit cool simultaneously	1	1-5	1-7	1-7	1-4	1-4
No. of draft arms	1	1-5	1-7	1-7	1-4	1-4
Size of refrigerating machine required (hp.)	1/4	1/4	1/4	1/4	1/3	1/3

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Liberty
Method of cooling employed....Immersion of beer coil in tank filled with brine except in Barette which uses special dry plate coil
Location of beverage cooling unit.....Top inside

REFRIGERATING MACHINE
Make of machine used.....Liberty
Where is machine installed..Self-contained or remote (optional)
Refrigerant used.....Methyl chloride
Type of temperature control.....Barette model—thermostatic; others—pressure

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Models S-52 & S-82—optional; others—no
Location of compartment.....Beneath drain board
Type of cooling.....Dry storage

INSULATION
Kind of insulation.....Balsam wool
Thickness of insulation.....2 in.

NATURE OF ASSEMBLED UNIT
Location of barrels....Model S-82—in end of assembly; others—remote
Is unit portable.....No
Can assembly be used as bar.....Yes

LIQUID CARBONIC

Liquid Carbonic Corp., 3100 S. Kedzie, Chicago, Ill.

Liquid Carbonic is offering its "Red Diamond" line of beer cooling and dispensing cabinets, together with two special cabinets equipped with Frigidaire beer cooling units, for installation in bar assemblies or for use as separate units. In addition, Liquid Carbonic is building custom-built bars in marble or metal exteriors with mahogany top and stainless steel metal work. The cabinet coolers are of stainless steel, and can be furnished with a mahogany or bakelite top for use as individual dispensers.

Model No.	262	263	264	265	266	267	268	269	270	271
OVERALL DIMENSIONS OF ASSEMBLY										
Width (in.)	18	32	30	52	80	42	52	80	54	28
Depth (in.)	42	42	42½	40¾	40¾	42½	40¾	40¾	42½	44
Height (in.)	23¾	23¾	22	28	28	22	28	28	22	38
CAPACITIES										
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°)	50	100	...	...	...	...	...	...	...	...
Capacity of keg compartment (in half barrels)	...	...	...	1	2	...	1	2	...	1
No. of beverage cooling units employed	1	2	2	2	3	4	2	2	5	1
How many beverages can one unit cool simultaneously	2	2	1	1	1	1	1	1	1	1
No. of draft arms	2	4	3	2	3	5	2	3	5	1
Size of refrigerating machine required (hp.)	1/4	1/2	1/2	1/2	1/2	1	1/2	1/2	1	1/4

BEVERAGE COOLING UNIT
Make of beverage cooling unit....Models 262 & 263—Frigidaire TT-12CC beer coolers; others—Zahm system
Method of cooling employed....Models 262 & 263—beer coils immersed in secondary refrigerant in sealed tank; others—beer in pressure tank cooled by surrounding direct expansion coils
Location of beverage cooling unit..Behind draft arm

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Remote
Refrigerant used.....Depends on machine

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Can be furnished
Kind of insulation.....Cork

NATURE OF ASSEMBLED UNIT
Location of barrels...Models 265, 266, 268, 269, 271—within assembly; others—remote
Is unit portable.....Model 271—yes; others—no
Can assembly be used as bar.....Yes

KINGERY

Kingery Mfg. Co.
424 E. Pearl St., Cincinnati, Ohio

Kingery dispensers are, with the exception of model 3, a novelty box, complete bars, entirely finished in formica. They are designed for remote installation of the compressor. Workboard is of stainless steel, draft arms are chromium plated.

Model No.	1	2	3
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	90	168	...
Depth (in.)	30	30	...
Height (in.)	42	42	...
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)	30-40	30	30
Capacity of keg compartment (in half barrels)	...	2	2
No. of beverage cooling units employed	2	2	2
How many beverages can one unit cool simultaneously	2	2	2
No. of draft arms	2	2	2
Size of refrigerating machine required (hp.)	1	½	½

BEVERAGE COOLING UNIT
Make of beverage cooling unit....Temprite
Method of cooling.....Immersion of beer coil in refrigerant by means of concentric coils
Location of beverage cooling unit.....In counter

REFRIGERATING MACHINE
Make of machine used.....Kelvinator
Type of temperature control.....Pressure
Refrigerant used.....Sulphur dioxide

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....No

INSULATION
Kind of insulation used.....Cork
Thickness of insulation.....Models 1 and 2—3½ in.; model 3—3 in.

NATURE OF ASSEMBLED UNIT
Location of barrels....Models 2 and 3—counter; model 1—remote
Is unit portable.....Yes
Can assembly be used as bar.....Yes

NEWMAN

Newman Bros., Inc.
416 Elm St., Cincinnati, Ohio

A feature of the Newman cooler is the removable partition between the front and back of the cooling compartment, making it possible to use the front portion for bottled goods. The exterior is finished in stainless steel, but can also be had in German silver and polished brass to meet the consumers pocketbook.

OVERALL DIMENSIONS OF ASSEMBLY
Width (in.) 96
Depth (in.) 24
Height (in.) 42

CAPACITIES
No. of beverage cooling units employed 2-4
No. of draft arms 2-4

BEVERAGE COOLING UNIT
Location of beverage cooling unit..Behind draft arms

REFRIGERATING MACHINE
Make of machine used.....Optional

INSULATION
Kind of insulation used.....Cork
Thickness of insulation.....1½ in.

NATURE OF ASSEMBLED UNIT
Is unit portable .....No
Can assembly be used as bar.....Yes

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Optional

LEITNER

M. Leitner & Co.
2322 Ogden Ave., Chicago, Ill.

The Leitner "Portabar" is a self-contained, portable model. Exterior panels are finished in porcelain of various colors. The other model is a stationary bar, complete in every detail.

Model No.	Portabar 200-S-P
OVERALL DIMENSIONS OF ASSEMBLY	
Width (in.)	90	114
Depth (in.)	29	29
Height (in.)	40½	44
CAPACITIES	
Capacity of bottle storage (in 12 oz. bottles)	...	100
Capacity of keg compartment (in half barrels)	2	2
No. of beverage cooling units employed	1	1
How many beverages can one unit cool simultaneously	2	2
No. of draft arms	2	2
Size of refrigerating machine required (hp.)	1/3	1/3

BEVERAGE COOLING UNIT
Make of beverage cooling unit....Commercial Coil & Refrigeration Co.
Method of cooling employed....Immersion of coil in sweet water bath
Location of beverage cooling unit..Behind draft arms

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed...Below draft beer cooling section
Type of temperature control..Thermostatic

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Model 200-S-P—yes; other—no
Location of compartment.....In keg sections and in coil compartment
Type of cooling.....Dry type with fin coils

INSULATION
Kind of insulation used.....Sheet cork
Thickness of insulation .....1½ in.

NATURE OF ASSEMBLED UNIT
Location of barrels....In ends of assembly
Is unit portable .....Yes
Can assembly be used as bar .....Yes

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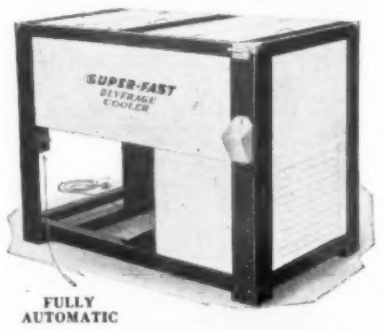

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You can make money selling the new Super-Fast beer cooler. It's the outstanding unit on the market and the lowest-priced quality cooler ever produced. Nine models—6 mechanical and 3 ice refrigerated. All-steel construction. Capacities up to 192 twelve-ounce bottles. Capable of cooling 84-degree beverages to 38 degrees in 30 minutes. Desirable territories now open for distributors or sales representatives. Prompt action advisable.

Write or Wire Today

ELECTRIC BEVERAGE COOLER COMPANY
421 S. Delaware St., Indianapolis, Ind.

McCRAY

McCray Refrigerator Sales Corp.
Kendallville, Ind.

Models B and C of the McCray line of beer cooling and dispensing equipment may be used as bars without additional bar furniture, but model A is a cooling and dispensing cabinet only. Model A is finished in porcelain, while models B and C have a standard exterior of birch-finished mahogany, although they may be had in porcelain. Drip pan and workboard are of Monel metal, and the draft arms are chromium plated.

Model No.	A	B	C
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	30	87	87
Depth (in.)	14	28	28
Height (in.)	42	42	42
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°)	12	12	12
Capacity of bottle storage (in pt. bottles)	...	...	224
Capacity of keg compartment (in half barrels)	...	2	...
No. of beverage cooling units employed	2	2	2
How many beverages can one unit cool simultaneously	1	1	1
No. of draft arms	2	2	2

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Own
Method of cooling employed....Immersion of beer coil in sweet water bath
Location of beverage cooling unit..Behind draft arm

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Remote
Refrigerant used.....Depends on machine

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment...Model C—yes; others—no
Location of compartment.....In ends of assembly
Type of cooling.....Dry storage
Kind of insulation.....Corkboard
Thickness of insulation.....1 in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....Model B—within assembly; others—remote
Is unit portable.....No
Can assembly be used as bar....Models B & C—yes; model A—no

NELSON

C. Nelson Mfg. Co.
2300 Division St., St. Louis, Mo.

The Nelson beer cooling and dispensing cabinet includes bottle storage space and can be had as a self-contained unit. It can serve as a bar or as part of an assembly. Top and drip pan can be had in either Monel metal or stainless steel, exterior is of porcelain finish, and draft arms are finished in polished brass or chromium.

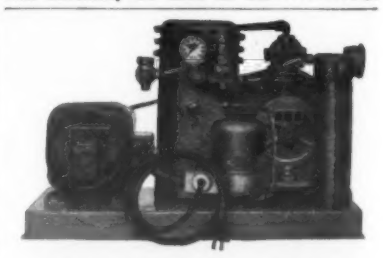
Model No.	1
OVERALL DIMENSIONS OF ASSEMBLY	
Width (in.)	70
Depth (in.)	30
Height (in.)	46
CAPACITIES	
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°)	25
Capacity of keg compartment (in half barrels)	2
No. of beverage cooling units employed	1
How many types of beverages can one unit cool simultaneously	2
No. of draft arms	2
Size of refrigerating machine required (hp.)	1/3

BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Nelson
Method of cooling employed....Immersion of beer coil in sweet water bath
Location of beverage cooling unit.....Top inside

REFRIGERATING MACHINE
Make of machine used...Nelson-Universal
Where is machine installed...With assembly (self-contained) or remote
Refrigerant used .....Methyl chloride
Type of temperature control..Thermostatic

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment .....Yes
Location of compartment.....Center of assembly
Type of cooling....Fin type direct expansion coil, beer cooled by convection
Kind of insulation.....Corkboard
Thickness of insulation.....2½ in.

NATURE OF ASSEMBLED UNIT
Location of barrels.....In both ends
Is unit portable .....Yes
Can assembly be used as bar.....Yes



QUINCY
Automatic
BEER PUMPS

This completely automatic beer pump unit is especially adapted for mounting in portable bars or novelty or specialty boxes. Exact pressure is always available—oil and moisture separator positively prevents any vaporous oil, moisture or dirt from entering the beer...1/4 Horse power repulsion induction motor...Overall dimensions: Length 23 in., width 12 in., height 14 in. Shipping weight 100 lb. Write for prices and literature.

Quincy Compressor Co.
160 Maine Street, Quincy, Illinois
205 W. Wacker Drive, Chicago, Illinois
30 Church Street, New York, New York

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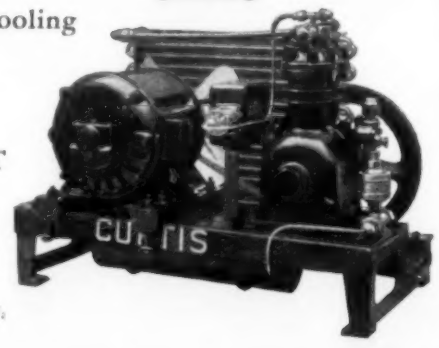

Curtis Pneumatic Machinery Company
1912 Kienlen Ave., St. Louis
518H Hudson Terminal Bldg., N. Y.
"79th Year"

RUSS

Russ Mfg. Co., 5700 Walworth Ave., Cleveland, Ohio

Russ equipment listed below is divided into three classes as follows: first three models—service bars; next two—complete service bars, fitted with sinks and extended bar fixtures; last two models—coil boxes for bar assemblies. The coil boxes may be had in any size (with any number of faucets) desired. In addition, Russ is building bar furniture and complete bars in any size desired. Service bars are finished in stainless steel, the complete bars in hardwood with oak tops, and the coil boxes in copper bearing steel. Drip pan can be had in Monel metal, stainless steel or polished copper.

Model No.	807-S	808-S	2247-S	8	6	6-S	9-S
OVERALL DIMENSIONS OF ASSEMBLY							
Width (in.)	80	80	74	96	72	24	24
Depth (in.)	27½	27½	27½	25	25	24	24
Height (in.)	41	41	41	41	41	42	42
CAPACITIES							
Capacity of bottle storage (in pt. bottles)	48	...	48	72	36	...	...
Capacity of keg compartment (half barrels)	2	2	2	2	1	...	...
No. of beverage cooling units employed	2	2	2	2	1	4	1
How many beverages can one unit cool simultaneously	1	1	1	1	1	1	2
No. of draft arms	2	2	2	2	1	4	4

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BEVERAGE COOLING UNIT
Make of beverage cooling unit.....Model 9-S—Frigidaire TT-12CC coil; other models—own
Method of cooling employed——Model 9S—immersion of beer coil in secondary refrigerant; others—immersion in sweet water bath
Location of beverage cooling unit..Behind draft arms

REFRIGERATING MACHINE
Make of machine used.....Optional
Where is machine installed.....Model 808-S—self contained; others—remote
Refrigerant used.....Depends on machine
Type of temperature control..Thermostatic

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Models 807-S, 2247-S, 8 & 6—yes; others—no
Location of compartment.....Below beer dispensing section
Type of cooling.....Dry storage
Kind of insulation.....Cork
Thickness of insulation.....2½ in.

NATURE OF ASSEMBLED UNIT
Location of barrels....Models 6-S & 9-S—remote; others—in ends of assembly
Is unit portable.....No
Can assembly be used as bar.....Models 6-S & 9-S—no; others—yes

SCHAEFER

Harold L. Schaefer, Inc.
1820 Harmon Place, Minneapolis, Minn.

The Schaefer draft beer cooling models include small draft beer cooling cabinets, and also combination bars, which have keg and bottle storage. The steel cabinets have a walnut finish, copper drain, and polished brass draft arms. They may be had as self-contained models, if desired.

Model No.	1849	1824	1819
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	49	24	19
Depth (in.)	18	18	18
Height (in.)	44¼	44¼	44¼
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)	40	40	40
Capacity of keg compartment (in half barrels)	...	...	2
Capacity of bottle storage (pint bottles)	70	...	...
(quart bottles)	24	...	...
No. of cooling units employed	1	1	1
How many beverages can one unit cool simultaneously	2	2	2
No. of draft arms	2	2	2
Size of refrigerating machine required (hp.)	1/3	1/3	1/3

BEVERAGE COOLING UNIT
Make of beverage cooling unit....Schaefer
Method of cooling.....Immersion of coil in sweet water bath
Location of beverage cooling unit..Behind draft arms

REFRIGERATING MACHINE
Make of machine used.....Universal
Where is machine installed.....Remote
Refrigerant used.....Methyl chloride
Type of temperature control..Thermostatic

NATURE OF ASSEMBLED UNIT
Location of barrels.....Remote
Is unit portable.....Model 1824—yes; others—no
Can assembly be used as bar.....Model 1849—yes; others—no

BOTTLE STORAGE COMPARTMENT
Does assembly have bottle storage compartment.....Model 1849—yes; others—no
Location of compartment.....Model 1849—one end

INSULATION
Kind of insulation.....Insulite
Thickness of insulation.....2 in.

SEEGER

Seeger Refrigerator Co., St. Paul, Minn.

Seeger draft beer dispensers are available in three different styles, two with keg storage compartments and one without. Exterior is steel with choice of walnut, mahogany, or green enamel finish. Workboard is of copper or stainless steel, and draft arms are finished in polished brass. Seeger draft beer dispensers can also be worked into various combinations with Seeger bottle coolers, and compressor cabinet, Seeger service sink, and Seeger keg storage cabinets.

Model No.	2	1	224
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	51	35½	24¾
Depth (in.)	25	25	23¾
Height (in.)	40¾	40¾	40¾
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hour, 55° to 40°)	30	15	...
Capacity of bottle storage (in 12 oz. bottles)	24	10-12	...
Capacity of keg compartment (in half barrels)	2	1	...
No. of beverage cooling units employed	2	1	...
How many beverages can one unit cool simultaneously	2	1	2
No. of draft arms	2	1	2
BEVERAGE COOLING UNIT			
Make of beverage cooling unit	Seeger		
Method of cooling	Immersion of coil in sweet water bath		
Location of beverage cooling unit	Behind draft arms		
REFRIGERATING MACHINE			
Make of machine used	Optional		
Where is machine installed	Models 2 and 1—self-contained; model 224—remote		
Type of temperature control	Optional		
BOTTLE STORAGE COMPARTMENT			
Does assembly have bottle storage compartment	Models 2 and 1—yes; model 224—no		
INSULATION			
Kind of insulation used	Insulite		
Thickness of insulation	Models 2 and 1—2 in.; model 224—1½ in.		
NATURE OF ASSEMBLED UNIT			
Location of barrels	Models 2 and 1—in cabinet; model 224—remote		
Is unit portable	Yes		
Can assembly be used as bar	Models 2 and 1—yes; model 224—no		

SUPERIOR

Superior Refrigerator Co.
100 Sidney St., St. Louis, Mo.

Model A in the Superior line is finished in oak and can be used as a bar. Other models are finished in porcelain (front) and oak (rear) and may be used as service bar or inserts. Linoleum tops, stainless steel drip pan, and chromium-plated draft arms are other features of the finish.

Model No.	A	S	BS
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	78	78	78
Depth (in.)	28	28	28
Height (in.)	44	44	44
CAPACITIES			
Capacity of bottle storage (in 12 oz. bottles)	48	48	48
Capacity of keg compartment (in half barrels)	2	2	2
No. of beverage cooling units employed	2	2	2
How many beverages can one unit cool simultaneously	1	1	1
No. of draft arms	2	2	2
BEVERAGE COOLING UNIT			
Make of beverage cooling unit	Optional		
Method of cooling	Immersion of coil in sweet water bath		
Location of beverage cooling unit	Behind draft arms		
REFRIGERATING MACHINE			
Make of machine used	Optional		
Where is machine installed	Remote		
Type of temperature control	Thermostatic		
INSULATION			
Kind of insulation used	Corkboard		
Thickness of insulation	3 in.		
NATURE OF ASSEMBLED UNIT			
Location of barrels	Within assembly		
Is unit portable	Yes		
Can assembly be used as bar	No		
BOTTLE STORAGE COMPARTMENT			
Does assembly have bottle storage compartment	Yes		
Location of compartment	Below draft arms		
Make of cooling coil in compartment	Optional		

SERVEL

Servel Sales, Inc., Evansville, Ind.

Servel's service bar may be used as part of an assembly or separately. It includes a bottle storage compartment. Bar top is of Panelyte with exterior panels of enameled steel. Drip pan is finished in stainless steel, and draft arms in chromium.

Model No.	DAW-31
OVERALL DIMENSIONS OF ASSEMBLY	
Width (in.)	31¼
Depth (in.)	28¾
Height (in.)	45¾
CAPACITIES	
Capacity of draft beer dispenser (in gal. per hour)	30 to 50
Capacity of bottle storage (in pt. bottles)	44
Capacity of keg compartment (in half barrels)	2
No. of beverage cooling units employed	1
How many beverages can one unit cool simultaneously	2
No. of draft arms	2
Size of refrigerating machine required (hp.)	1/3 or 1/2
BEVERAGE COOLING UNIT	
Make of beverage cooling unit	Servel
Method of cooling employed	Immersion of beer coil in sweet water bath
Location of beverage cooling unit	Top inside
REFRIGERATING MACHINE	
Make of machine used	Servel
Where is machine installed	In assembly
Refrigerant used	Methyl chloride
Type of temperature control	Thermostatic*
BOTTLE STORAGE COMPARTMENT	
Does assembly have bottle storage compartment	Yes
Location of compartment	Below draft arms
Type of cooling	Dry storage
INSULATION	
Kind of insulation	Temlok
Thickness of insulation	1½ in.
NATURE OF ASSEMBLED UNIT	
Is unit portable	No
Can assembly be used as bar	Yes

*Temperature of keg and draft cooling compartments separately controlled.

STA-COLD

Wayne Showcase Co.
632 Madison Ave., Detroit, Mich.

All Sta-Cold models come complete with solid oak bar front and a bar top of oak or white maple. All units have pre-cooling chambers for half barrels. One model is self-contained. Workboard may be had in copper, brass, or stainless steel, and draft arms are finished in brass or chromium, to match the workboard.

Model No.	690	690A	695
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	72	72	96
Depth (in.)	27	27	27
Height (in.)	Front—45 Rear—37½	45 37½	45 37½
CAPACITIES			
Capacity of draft beer dispenser (in gal. per hr., 55° to 40°)	26-50	26-50	26-50
Capacity of bottle storage (in 12 oz. bottles)	70	70	70
Capacity of keg compartment (in half barrels)	2	2	2
No. of beverage cooling units employed	2	2	2
How many beverages can one unit cool simultaneously	2	2	2
No. of draft arms	2	2	2
Size of refrigerating machine required (hp.)	1/3-½	1/3-½	1/3-½
BEVERAGE COOLING UNIT			
Make of beverage cooling unit	Own		
Method of cooling	Immersion of beer coils in sweet water bath		
Location of beverage cooling unit	Behind draft arms		
REFRIGERATING MACHINE			
Make of machine used	Optional		
Where is machine installed	Model 695—under sink; others—remote		
Type of temperature control	Thermostatic		
BOTTLE STORAGE COMPARTMENT			
Does assembly have bottle storage compartment	Yes		
Location of compartment	Under drain pan		
Type of cooling	Wet storage		
INSULATION			
Kind of insulation used	Cork		
Thickness of insulation	1½ in.		
NATURE OF ASSEMBLED UNIT			
Location of barrels	Ends		
Is unit portable	Yes		
Can assembly be used as bar	Yes		

"SUPER-COLD"

Commercial Refrigerator Mfg. Co.
1020 E. 59th St., Los Angeles, Calif.

"Super-Cold" beer cooling and dispensing cabinets, with top and exterior finished in golden oak on imported mahogany panel, are complete bars by themselves, although they fit into a bar assembly with wood finishes. Drip pan is of burnished copper, draft arms of polished brass.

Model No.	212	212SCB	412	412SCB
OVERALL DIMENSIONS OF ASSEMBLY				
Width (in.)	35	63	52	80
Depth (in.)	27	27	27	27
Height (in.)	40½	40½	40½	40⅛
CAPACITIES				
Capacity of bottle storage (pt. bottles)	72	...	...	72
Capacity of keg compartment (half barrels)	1	1	2	2
No. of beverage cooling units employed	1	1	2	2
How many beverages can one unit cool simultaneously	1	1	1	1
No. of draft arms	1	1	2	2
Size of refrigerating machine required (hp.)	1/4	1/4	1/4	1/4
BEVERAGE COOLING UNIT				
Make of beverage cooling unit	Super-Cold			
Method of cooling employed	Immersion of beer coil in brine tank			
Location of beverage cooling unit	Top			
REFRIGERATING MACHINE				
Make of machine used	Super-Cold			
Where is machine installed	Models 212-SCB & 412-SCB—self-contained; others—remote			
Refrigerant used	Methyl chloride			
Type of temperature control	Thermostatic			
BOTTLE STORAGE COMPARTMENT				
Does assembly have bottle storage compartment	Models 212-SCB & 412-SCB—yes; others—no			
Location of compartment	In top and end			
Type of cooling	Dry storage			
NATURE OF ASSEMBLED UNIT				
Location of barrels	Below draft arm			
Is unit portable	No			
Can assembly be used as bar	Yes			

THESCO

C. Schmidt Co.
John & Livingston Sts., Cincinnati, Ohio

C. Schmidt Co.'s "Thesco" beer cooling and dispensing cabinets are designed to provide for the cooling of beer in a bar assembly. They can be finished in either metal or wood exteriors, and have Monel metal drip pans. Draft arms are finished in chromium. In addition, C. Schmidt Co. is building service counters with mahogany tops and porcelain panels.

Model No.	8602	8609	8612
OVERALL DIMENSIONS OF ASSEMBLY			
Width (in.)	24	24	72
Depth (in.)	24	24	24½
Height (in.)	44	41½	44
CAPACITIES			
Capacity of bottle storage (in 12 oz. bottles)	...	24	24
Capacity of keg compartment (in half barrels)	1	1	2
No. of beverage cooling units employed	1-2	1-2	1-2
How many types of beverages can one unit cool simultaneously	2	2	2
No. of draft arms	2	2	2
Size of refrigerating machine required (hp.)	1/3	1/3	...
BEVERAGE COOLING UNIT			
Make of beverage cooling unit	Zahm or block tin coils		
Method of cooling employed	Beer in pressure tank cooled by surrounding direct expansion coils		
Location of cooling unit	Behind draft arm		
REFRIGERATING MACHINE			
Make of machine used	Optional		
Where is machine installed	Remote		
Type of temperature control	Thermostatic		
BOTTLE STORAGE COMPARTMENT			
Does assembly have bottle storage compartment	Models 8609 & 8612—yes; 8602—no		
Location of compartment	Below drip pan		
Type of cooling	Dry storage		
INSULATION			
Kind of insulation	Sheet cork		
Thickness of insulation	2 in.		
NATURE OF ASSEMBLED UNIT			
Location of barrels	Remote		
Is unit portable	Yes		
Can assembly be used as bar	Yes		

UNITED-AMERICAN

United-American Soda Fountain Co.
101 Walnut St., Watertown, Mass.

United-American Soda Fountain is offering both a beer cooling cabinet and a complete bar assembly. The latter is of all-metal finish, with stainless steel bar top, porcelain enamel exterior, stainless steel workboard, and chromium-plated draft arms. It has bottle storage facilities.

Model No.	36	80
OVERALL DIMENSIONS OF ASSEMBLY		
Width (in.)	36	96
Depth (in.)	18	30
Height (in.)	42	44
CAPACITIES		
Capacity of draft beer dispenser (in gal. per hour, 50° to 40°)	40	40
Capacity of bottle storage (in pt. bottles)	...	144
No. of beverage cooling units employed	1	1
No. of draft arms	2	2
Size of refrigerating machine required (hp.)	1/3	1/2
BEVERAGE COOLING UNIT		
Make of beverage cooling unit	Frigidaire TT-12-CC or any standard DX coil	
Method of cooling employed	Immersion of beer coil in refrigerant where Frigidair cooler is used; immersion in sweet water bath where DX coils are used	
Location of beverage cooling unit	Top inside	
REFRIGERATING MACHINE		
Make of machine used	Optional	
Where is machine installed	Remote	
Refrigerant used	Depends on machine	
Type of temperature control	Pressure	
BOTTLE STORAGE COMPARTMENT		
Does assembly have bottle storage compartment	Model 36—no; 80—yes	
Location of compartment	End of assembly	
Type of cooling	Dry storage	
Kind of insulation	Corkboard	
Thickness of insulation	3 in. sides; 4 in. bottom	
NATURE OF ASSEMBLED UNIT		
Location of barrels	Remote	
Is unit portable	No	
Can assembly be used as bar	Model 36—no; model 80—yes	

VICTOR

Victor Products Corp., Hagerstown, Md.

Victor's line consists of a group of draft beer dispensing cabinets, which can be inserted in bar assembly or employed separately. Most of the models have bottle storage compartments. Exteriors are of steel, drip pan of stainless steel.

Model No.	B-1	B-2	B-7	B-9
OVERALL DIMENSIONS OF ASSEMBLY				
Width (in.)	19	56	85	32
Depth (in.)	19	30	30	30
Height (in.)	41	51	42	41
CAPACITIES	...	...	...	...
Capacity of draft beer dispenser (in gal. per hour)	30	30	30	30
Capacity of bottle storage (in 12 oz. bottles)	...	72	77	65
Capacity of keg compartment (in half barrels)	...	2	2	...
No. of beverage cooling units employed	1	1	1	1
How many beverages can one unit cool simultaneously	2	3	3	3
No. of draft arms	2	2	2	2
BEVERAGE COOLING UNIT				
Make of beverage cooling unit	Victor Products			
Method of cooling	Immersion in sweet water bath			
Location of beverage cooling unit	Back of draft arms			
REFRIGERATING MACHINE				
Make of machine used	Optional			
Where is machine installed	Remote			
INSULATION				
Kind of insulation used	Vegetable corkboard			
Thickness of insulation	2 in.			
NATURE OF ASSEMBLED UNIT				
Location of barrels	Models B-2 and B-7—within assembly; others—remote			
Is unit portable	Yes			
Can assembly be used as bar	Yes			
BOTTLE STORAGE COMPARTMENT				
Does assembly have bottle storage compartment	Models B-2, B-7, B-9—yes; B-1—no			
Location of compartment	Model B-2—left of coil tank; others—below draft arms			

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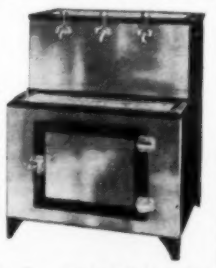

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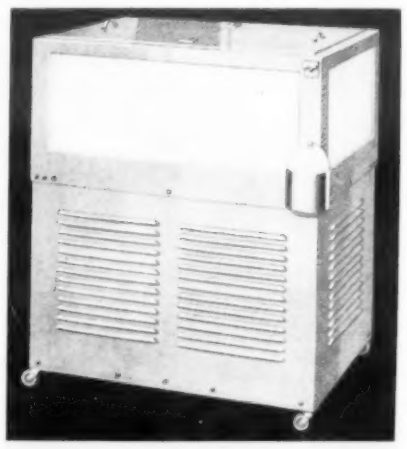

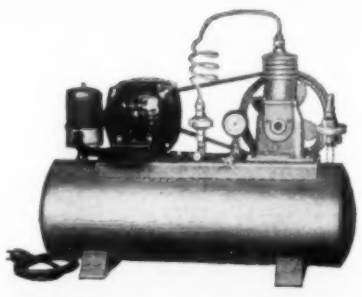

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500 North Webster Street — Dayton, Ohio

BOTTLE COOLERS

ACORN OPALITE

Acorn Opalite Metal Specialties Co.
1052 W. Monroe St., Chicago, Ill.

The Acorn Opalite Metal Specialties bottle-beer cooler comes in three different sizes. It is available with either the dry-storage or bottle immersion types of cooling. Top lid is of the hinged type.

Model No.	1933-BC
OVERALL DIMENSIONS (in.)	
Width	24-30-36
Depth	22
Height	42
CAPACITIES	
Total No. of 12 oz. bottles	48-60-72
No. of compartments in cooler	1
METHOD OF COOLING	
Type of cooling employed	Dry storage or bottle immersion
Make of coil used	Optional
Make of expansion valve	Optional
Is brine tank provided	No
INSULATION	
Kind of insulation	Sheet cork
Thickness in sides and ends	1 in.
Thickness in bottom	2 in.
MATERIALS USED IN CONSTRUCTION	
For exterior	Metal
For shelves	Metal
For top or lid	Metal
DRAIN	
Are drain facilities standard	Yes
Is plumbing connection necessary	Yes

CONSOLIDATED

Consolidated Equipment Corp.
Greenville, Mich.

Consolidated bottle coolers have a space for pre-cooling bottles in the base of the cabinet. One-half of the payload is placed in the pre-cooler and is cooled by direct-expansion type coil. These bottles are transferred to the main cooling and dispensing compartment, which is cooled by a plate-type evaporator, when necessary. Doors to pre-cooler compartment in bottom are of swing-out type, lids to main dispensing compartment are hinged.

Model No.	A-14	A-27	A-55
OVERALL DIMENSIONS (in.)			
Width	30	55½	112
Depth	29	29	29
Height	51	51	51
CAPACITIES			
Total No. of 12 oz. bottles	140	275	550
Size of refrigeration unit required (hp.)	1/3	1-1/2	3/4
METHOD OF COOLING			
Type of cooling employed	Dry storage, with plate-type evaporator		
Make of coil used	Consolidated plate-type evaporator		
Make of expansion valve	Detroit Lubricator		
Is brine tank provided	No, but plate is filled with hold-over solution		
INSULATION			
Kind of insulation	Corkboard		
Thickness in sides and ends	2 in.		
Thickness in bottom	2 in.		
Thickness in top	2 in.		
MATERIALS USED IN CONSTRUCTION			
For exterior	Porcelain or bright metal		
For shelves	Copper-bearing galvanneal		
For top or lid	Monel metal or stainless steel		
DRAIN			
Are drain facilities standard	No		
Is plumbing connection necessary	No		

DAYTON

Dayton Pump & Mfg. Co.
Dayton, Ohio

Dayton Pump's bottle beer cooler is a portable, self-contained, fully enclosed job finished in white. It uses a Dayton refrigerating unit housed in the bottom of the cooler. The lid is of the hinged type.

Model No.	R-2500
OVERALL DIMENSIONS (in.)	
Width	31
Depth	22
Height	37½
CAPACITIES	
Total no. of 12-oz. bottles	70
No. of compartments in cooler	1
No. of bottles cooled in hour	12-24
METHOD OF COOLING	
Type of cooling employed	Wet storage
Make of coil used	Dayton
INSULATION	
Kind of insulation used	Insulite
MATERIALS USED IN CONSTRUCTION	
For exterior	Steel
For interior	Steel
For top or lid	Steel

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ANDERSON, INDIANA

ESCO

Esco Cabinet Co., West Chester, Pa.

Two models in the Esco series have bottle immersion cooling compartments only, while the two other models have both bottle immersion and dry storage cooling compartments. Esco cabinets are not self-contained.

Model No.	M96	M192	MS96	MS192
OVERALL DIMENSIONS (in.)				
Width	51	73½	51	73½
Depth	25	29	25	29
Height	36	36	36	36
CAPACITIES				
Total No. of 12 oz. bottles	96	192	54	112
No. of compartments in cooler	3	5	3	5
Size of refrigeration unit required (hp.)	1/4	1/3	1/4	1/3
METHOD OF COOLING				
Type of cooling employed	Models M96 & M192—bottle immersion; model MS96—3 bottle immersion compartments & one dry-storage compartment; model MS192—3 bottle immersion compartments and 2 dry-storage compartments			
Make of coil used	Esco			
Make of expansion valve	Detroit Lubricator			
Is brine tank provided	No			
MATERIALS USED IN CONSTRUCTION				
For exterior	Armco Ingot Iron			
For interior	Armco Ingot Iron			
For top or lid	Special composition material			
DRAIN				
Are drain facilities standard	Yes			
Is plumbing connection necessary	Yes			

FEDDERS

Fedders Mfg. Co., Inc.
57 Tonawanda St., Buffalo, N. Y.

Fedders bottle coolers are self-contained, portable models. They are equipped with a cold control having a temperature range of 32° F. to 50° F. Lids are of the hinged type.

Model No.	BC-12	BCW-12
OVERALL DIMENSIONS (in.)		
Width	34	34
Depth	26½	26½
Height	33½	33½
CAPACITIES		
Total no. of 12-oz. bottles	72	72
No. of bottles cooled in hour (70° to 40°)	24	24
No. of compartments in cooler	9	9
Capacity of each compartment	8	8
Size of refrigeration unit required (hp.)	1/3-¼	1/3-¼
METHOD OF COOLING		
Type of cooling employed	Dry storage, direct contact	
Make of coil used	Fedders	
Make of expansion valve	Fedders	
Refrigerant used	Sulphur dioxide	
Is brine tank provided	No	
INSULATION		
Kind of insulation used	Celotex	
Thickness in sides and ends (in.)	1½	
Thickness in bottom (in.)	2	
Thickness in top (in.)	1	
MATERIALS USED IN CONSTRUCTION		
For exterior	Furniture steel	
For interior	Zinc and copper	
For top or lid	Furniture steel	
DRAIN		
Are drain facilities standard	Yes	
Is plumbing connection necessary	No	

GLASCOCK

Glascock Bros. Mfg. Co., Muncie, Ind.

All Glascock models designed for use with mechanical refrigeration are of the self-contained type, with the storage compartments supported by an angle iron frame, with the refrigerating machine installed in the base, surrounded by wire mesh. The "Public Service" model has a vending machine attachment, and serves 6 oz. bottles only, while other models store both 6 oz. and 12 oz. bottles.

Model No.	Public Service	Master
OVERALL DIMENSIONS (in.)		
Width	32½	33½ 44½
Depth	24½	24½ 25½
Height	33½	33½ 34
CAPACITIES		
Total No. 12 oz. bottles	32	78 110
No. of bottles cooled in hour	32	42 42
No. of compartments in cooler	1	1 1
Size of refrigeration unit required (hp.)	1/6	1/6 1/4
METHOD OF COOLING		
Type of cooling employed	Wet storage	
Make of coil	Kelvinator	
Refrigerant used	Sulphur dioxide	
INSULATION		
Kind of insulation	Celotex	
Thickness in sides and ends	Master model—2¼ in.; others—1½ in.	
Thickness in bottom	Master model—2½ in.; others—2 in.	
MATERIALS USED IN CONSTRUCTION		
For exterior	Steel	
For interior	Galvanized steel	
For shelves	Galvanized wire	
For top or lid	Galvanized steel	
DRAIN		
Are drain facilities standard	Yes	
Is plumbing connection necessary	No	

FRIGIDAIRE

Frigidaire Corp., Dayton, Ohio

Frigidaire bottle coolers are self-contained, single compartment models with compressor in base of the cabinet. Exterior is of angle iron and composition board, and shelves are of stainless wire.

Model No.	BB-78	BB-110
OVERALL DIMENSIONS (in.)		
Width	32½	44½
Depth	24½	25½
Height	34	34
CAPACITIES		
Total no. of 12-oz. bottles	78	110
No. of bottles cooled in hour	16	24
No. of compartments in cooler	1	1
Size of refrigeration unit required (hp.)	1/6	1/4
METHOD OF COOLING		
Type of cooling employed	Bottle immersion	
Make of coil used	Frigidaire	
Refrigerant used	Sulphur dioxide	
Is brine tank provided	No	
INSULATION		
Kind of insulation used	Celotex	
Thickness in sides and ends (in.)	Model BB-78—1¾; model BB-110—2¼	
Thickness in bottom (in.)	Model BB-78—2; model BB-110—2½	
MATERIALS USED IN CONSTRUCTION		
For exterior	Angle iron and composition board	
For interior	Galvanized steel	
For shelves	Stainless wire	
For top or lid	Metal	
DRAIN		
Are drain facilities standard	Yes	
Is plumbing connection necessary	No	

GRINNELL

Grinnell Electrical Mfg. Co.
Grinnell, Iowa

Grinnell bottle coolers are self-contained, a Grinnell refrigerating unit being installed in the base of the cabinet. Temperature control is thermostatic. Lids are of the hinged type.

Model No.	President	Senator
OVERALL DIMENSIONS (in.)		
Width	32½	44½
Depth	24½	25½
Height	33¼	34
CAPACITIES		
Total No. of 12 oz bottles	78	110
No. of compartments in cooler	1	1
Size of refrigeration unit required (hp.)	1/6	1/4
METHOD OF COOLING		
Type of cooling employed	Bottle immersion	
Make of coil used	Grinnell	
Make of expansion valve	American Radiator	
Refrigerant used	Sulphur dioxide	
Is brine tank provided	No	
INSULATION		
Kind of insulation used	Celotex	
Thickness in sides and ends	President model—1¾ in.; Senator model—2¼ in.	
Thickness in bottom	President model—2 in.; Senator model—2½ in.	
Thickness in top	½ in.	
DRAIN		
Are drain facilities standard	Yes	
Is plumbing connection necessary	No	
MATERIALS USED IN CONSTRUCTION		
For exterior	Steel	
For interior	Galvanized steel	
For shelves	Galvanized steel	
For top or lid	Steel	

MAYFLOWER

Trapar Mfg. Co.
140 Davis Ave., Dayton, Ohio

The Mayflower is a self-contained model, the compressor being in the base of the cabinet. Lids are on the top and of the hinged type.

Model No.	BC-60
OVERALL DIMENSIONS (in.)	
Width	31
Depth	22
Height	38½
CAPACITIES	
Total No. of 12 oz. bottles	60
No. of compartments in cooler	1
Size of refrigeration unit required (hp.)	1/4
METHOD OF COOLING	
Type of cooling employed	Bottle immersion
Make of coil used	Mayflower
Make of expansion valve	Detroit Lubricator
Refrigerant used	Sulphur dioxide
Is brine tank provided	No
INSULATION	
Kind of insulation	Insulite
Thickness in sides and ends	1½ in.
Thickness in bottom	1½ in.
Thickness in top	½ in.
MATERIALS USED IN CONSTRUCTION	
For exterior	Steel
For interior	Galvanized sheet steel
For top or lid	Steel
DRAIN	
Are drain facilities standard	Yes
Is plumbing connection necessary	No

SCHAEFER

Harold L. Schaefer, Inc.
1620 Harmon Place, Minneapolis, Minn.

The Schaefer bottle beer cooler is a self-contained model of the dry-storage type, fitted with tubular coils. Frame is heavy angle iron, welded into one piece. A cold control allows temperature adjustment from 32° F. to 50° F.

Model No.	2766	2734
OVERALL DIMENSIONS (in.)		
Width	66	34
Depth	26½	26½
Height	35½	33½
CAPACITIES		
Total no. of pint bottles	112	56
Total no. of quart bottles	24	12
No. of compartments in cooler	2	1
Size of refrigeration unit required (hp.)	1/3	1/3
METHOD OF COOLING		
Type of cooling employed	Dry storage	
Is brine tank provided	No	
Type of temperature control	Thermostatic	

SEEGER

Seeger Refrigerator Co., St. Paul, Minn.

Seeger's bottle beer coolers are portable units finished in baked-on olive green enamel. The lid on model 80SG is of the hinged type while other models employ a sliding top.

Model No.	80-SG	3-SG	4-SG	5-SG
OVERALL DIMENSIONS (in.)				
Width	36½	36	48	60
Depth	23½	23½	23½	23½
Height	38¾	31¼	31¼	31¼
CAPACITIES				
No. of compartments in cooler	2	2	2	2
METHOD OF COOLING				
Type of cooling employed	Wet storage			
Make of coil used	Seeger			
Refrigerant used	Depends on machine			
INSULATION				
Thickness in sides and ends (in.)	2			
Thickness in bottom (in.)	2			
Thickness in top (in.)	2			
MATERIALS USED IN CONSTRUCTION				
For exterior	Steel			
For interior	Galvanized steel			
For shelves	Galvanized steel			
For top or lid	Steel			
DRAIN				
Are drain facilities standard	Yes			
Is plumbing connection necessary	No			

NORGE

Norge Corp.
670 E. Woodbridge, Detroit, Mich.

Norge bottle coolers are featured by the use of forced draft cooling. The models are self-contained and may be made portable with the addition of castors. Exterior finish is black porcealin and stainless steel, and interior of porcelain. Doors are in the side and are of the swing out type.

Model No.	Dry Bottle	SG	MG
OVERALL DIMENSIONS (in.)			
Width	43⅜	32⅝	44¾
Depth	25⅝	25⅞	26¼
Height	34⅝	35	35
CAPACITIES			
Total no. of 12-oz. bottles	98	75	110
No. of compartments in cooler	2	1	1
Capacity of each compartment	35 and 63	75	110
Size of refrigeration unit required (hp.)	1/4	1/4	1/4
METHOD OF COOLING			
Type of cooling employed	Dry bottle model—dry storage with forced circulation; others—wet storage		
Make of coil used	Own		
Make of expansion valve	Mayson		
Refrigerant used	Sulphur dioxide		
Is brine tank provided	Dry bottle model—no; others yes		
INSULATION			
Thickness in sides and ends (in.)	2½		
Thickness in bottom (in.)	Dry bottle model—3-5/16; others—2½		
Thickness in top (in.)	Dry bottle model—3; others—½		
MATERIALS USED IN CONSTRUCTION			
For exterior	Steel		
For interior	Dry bottle model—steel; others galvanized iron		
For shelves	Steel tinned		
For top or lid	Dry bottle model—stainless steel; others—steel		
DRAIN			
Are drain facilities standard	Yes		
Is plumbing connection necessary	No		

SERVEL

Servel Sales, Inc., Evansville, Ind.

Servel's beer cooler is a vertical cabinet, built much in the style of a domestic refrigerator, with a single main door and individual sliding doors to each compartment. Servel's Humidraft (forced convection cooling unit) is used in this cooler.

Model No.	BA-5
OVERALL DIMENSIONS (in.)	
Width	37¾
Depth	26
Height	62
CAPACITIES	
Total No. of 12 oz. bottles	126
No. of compartments in cooler	6
Capacity of each compartment (bottles)	21
Size of refrigeration unit required (hp.)	1/4 or 1/3
METHOD OF COOLING	
Type of cooling employed	Dry storage, with forced convection
Make of coil used	Servel Humidraft
Make of expansion valve	Detroit Lubricator
Refrigerant used	Methyl chloride
Is brine tank provided	No
INSULATION	
Kind of insulation	Temlok
Thickness in sides and ends	2 in.
Thickness in bottom	2½ in.
Thickness in top	2 in.
MATERIALS USED IN CONSTRUCTION	
For exterior	Steel
For interior	Steel
For shelves	Tinned ribbon
For top or lid	Steel
DRAIN	
Are drain facilities standard	Yes
Is plumbing connection necessary	No

SUPER-FAST

Electric Beverage Cooler Co., Inc.
421 S. Delaware St., Indianapolis, Ind.

Electric Beverage bottle beer coolers are all self-contained models, the compressor being housed in the bottom of the frame. They are fitted with vacuum coil-plate construction for quick cooling. Coolers are all-steel in construction with outside finish of lacquer and inner of rust-resisting paint. Lids are removable.

Model No.	M-60	M-120	M-192
OVERALL DIMENSIONS (in.)			
Width	30	58	69
Depth	19	20	25
Height	31	36	36
CAPACITIES			
Total no. 12-oz. bottles	60	120	192
No. of compartments in cooler	1	5	8
Capacity of each compartment	60	24	24
Size of refrigeration unit required (hp.)	1/6	1/4	1/4
METHOD OF COOLING			
Type of cooling employed	Wet bath		
Type of coil used	Vacuum plate		
Make of expansion valve	Detroit Lubricator		
Refrigerant used	Methyl chloride		
INSULATION			
Thickness in sides and ends (in.)	Model M-60—1; others 1½		
Thickness in bottom (in.)	Model M-60—1½; others—2		
Thickness in top (in.)	⅛		
MATERIALS USED IN CONSTRUCTION			
For exterior	Steel		
For interior	Galvanized iron		
For top or lid	Steel		
DRAIN			
Is plumbing connection necessary	Yes		

VICTOR

Victor Products Corp.
Frederick Rd., Hagerstown, Md.

Victor bottle coolers may be had as self-contained units, with refrigerating unit in bottom, if desired. Where this is done, the cabinet is easily made portable by inserting castors on the corners. Cabinets can be furnished with hinged or sliding lids.

Model No.	B-36	B-72
OVERALL DIMENSIONS (in.)		
Width	41	74
Depth	29	29
Height	42	42
CAPACITIES		
Total No. of 12 oz. bottles	70	140
No. of bottles cooled in hour	35	70
No. of compartments in cooler	2	4
Capacity of each compartment	35	35
METHOD OF COOLING		
Type of cooling employed	Bottle immersion	
Make of coil used	Victor Products	
Is brine tank provided	No	
INSULATION		
Kind of insulation	Vegetable corkboard	
Thickness in sides and ends	2 in.	
Thickness in bottom	2 in.	
Thickness in top	2 in.	
MATERIALS USED IN CONSTRUCTION		
For exterior	Galvanized steel	
For interior	Galvanized metal	
For shelves	Galvanized metal	
For top or lid	Galvanized steel	
DRAIN		
Are drain facilities standard	Yes	
Is plumbing connection necessary	Yes	

2 FRIGIDAIRE BEER COOLERS INSTALLED

DETROIT—Oriole Terrace, dine and dance place on East Gand Blvd. here, has installed two Frigidaire TT-12CC beer coolers, according to Jack Collins, manager.

They are used in a four-tap beer dispenser made by the Michigan Store Fixture Co. These two coolers will cool approximately 100 gal. of beer per hour, this being partially due to the low temperature at which the kegs are kept, the kegs being stored in a meat refrigerator at about 34° F.

This model Frigidaire draft-beer cooler employs a secondary refrigerant sealed in an insulated tank. Beer flows through a continuous coil of block tin tubing immersed in the secondary refrigerant, causing the refrigerant to vaporize and the beer to cool. Vaporized refrigerant is condensed on the primary refrigerant coils above in the same tank, and falls back as a liquid to the bottom of the tank.

A Frigidaire compressor has been installed to handle the beer coolers alone.

Mr. Collins reports that he gets an average of 220 10-oz. glasses from every half-barrel.

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BEER COOLING

BOOK-CADILLAC TO FURNISH TAP ROOM

DETROIT—Heartened by the increased patronage which the legalization of beer has brought to its dining room, the Book-Cadillac hotel here may soon furnish and equip a tap room to be used exclusively for dispensing beer.

"Since the return of beer the number of customers served by our dining rooms has increased 25 per cent," declares J. E. Frawley, manager. "We believe that this increase is due to the fact that it is no longer necessary for hotel patrons who want a glass of beer with their meals, or who wish to treat their guests, to go out to a speakeasy.

Prefer Good Food

"We believe that the average citizen prefers to patronize the hotel dining room where he knows he will get good food. He will also be supporting a legitimate enterprise.

"We are going to bend every effort to provide the proper surroundings for the consumption of beer, to offer the best facilities possible for patrons who enjoy a glass of beer."

Liquid Carbonic Dispenser

In the kitchen which serves the dining rooms of the Book-Cadillac is installed a Liquid Carbonic dispensing cabinet with six draft arms and equipped with four Liquid-Zahm pressure coolers.

The bottle storage compartments have a capacity of about 30 cases. The bottles are pre-cooled in storage refrigerators before being brought to the bar.

A Frigidaire ½-hp. compressor furnishes the necessary refrigeration for this set-up.

LIQUID CARBONIC SYSTEM, McCRAY BOX COOLS BEER

TOLEDO—Liquid Carbonic draft-beer dispensing cabinets, a McCray commercial refrigerator cabinet, and a McCray keg storage cooler have been installed in the Diamond Cafe here as part of a beer dispensing set-up.

The equipment is mechanically refrigerated, a Universal Cooler machine carrying the load.

The Liquid Carbonic equipment consists of a two-tap draft-beer dispensing cabinet and a 5-tap draft-beer dispenser, both equipped with the Zahm pressure system of cooling.

Beer is tapped directly from the McCray keg storage box in the basement. This refrigerator will hold 16 kegs and is refrigerated with a McCord evaporator.

The McCray commercial reach-in refrigerator is installed at one end of the bar and is used to cool bottled beer and to refrigerate cold meats and other light lunch foods. Another dry-storage bottle cooler, with finned coil, is installed underneath the bar.

A mahogany, pre-prohibition bar is being used at present, but Proprietor Francis Schuchman is contemplating the installation of a 32-ft. Liquid Carbonic "modern" bar in marble and metal.

CAFE'S BEER COOLED BY KELVINATOR EQUIPMENT

DETROIT—The Oasis Cafe on Plymouth Road here has installed a special storage box for bottled beer (furnished by the Chrysler & Koppin Refrigerator Co.). It will hold 15 cases of beer and four half-barrels.

Refrigeration for this storage box is furnished through a Kelvinator forced convection cooling unit. The bottles, which are placed on racks in the cooler, are cooled from 90° F. to 40° F. in 90 minutes.

For draft beer a Kelvinator-Temprite instantaneous cooler serving two beer taps and a water faucet has been installed. This equipment will cool 30 gal. of beer and 20 gal. of water in an hour.

A Kelvinator ¾-hp. condensing unit is furnishing the refrigeration for the entire installation.

Kelvinator Used in Pender Cabinets

LYNN, Mass.—R. T. Pender, Inc., of this city has installed a number of its draft beer dispensing cabinets equipped with Kelvinator electric refrigeration in food serving establishments throughout this territory.

Numbered among the users of this equipment are the Central Lunch, Charles Goucher Restaurant, Victoria Lunch, Curtis Restaurant, and Roma Restaurant, all of this city; Newburyport Diner, Newburyport, Mass.; and Bridge Lunch, Salem, Mass.

The Pender dispenser is a two-tap model employing a sweet water bath cooled by 50 ft. of refrigeration coil.

Brunswick Bar & Backbar Used in Beer Garden

DETROIT—A 16-ft. Brunswick-Balke-Collender bar and backbar has been installed in the beer garden operated by John Horvath at 8160 W. Jefferson Ave. here.

The bar and backbar have a walnut finish, and the bar top is of Honduras mahogany. The dispensing unit has two taps, with the draft beer being cooled by a single Temprite instantaneous cooler with a capacity of 30 gal. per hour.

The kegs are installed in the basement so the ends of the dispensing cabinet are utilized for the cooling of bottled beer. Each end has a capacity of 100 bottles. These compartments are cooled by pipe coils placed underneath the shelves.

A Kelvinator ½-hp. water-cooled compressor, installed in the center of the dispensing cabinet, furnishes the necessary refrigeration for this set-up.

Owner of Food Shop Makes Immersion Beer Cooler

FT. WAYNE, Ind.—Christen's Food Shop on E. Wayne St. here has not found it very difficult to provide cold bottled beer for its customers. A bottle cooler of immersion type and a few feet of refrigeration tubing was all the material needed to provide equipment which would allow P. E. Christen, proprietor, to give his customers cold bottled beer.

Converted to mechanical refrigeration for his meat display counter some time ago, Proprietor Christen consulted J. A. Forshea, local Servel dealer, when he decided that he would sell cold beer. Mr. Forshea made the hook-up for him.

Beer put in warm will be cooled in 15 or 20 minutes by the sweet water bath, which is kept at a temperature of about 36° F., Mr. Christen states.

Mr. Christen is using a ½-hp. machine to take care of his 10-ft. double-duty display case and bottle cooler.

VETERAN BARTENDER USES NEW BEER COOLING UNITS

DETROIT—The return of beer has encouraged Ernie Foss, who ran a well-known restaurant at 22nd and Bagley Aves. here from 1904 to 1920 and then ceased operations with the advent of prohibition, to resume his operations at his old stand.

He has constructed a special cooler in his basement to cool bottled beer and half-barrels. A Kelvinator forced convection cooler is employed to refrigerate this storage box.

As part of his bar assembly he has a 4-ft. bottle storage chest, with a capacity of 6 cases. A Kelvinator continuous fin coil is used to cool the chest.

To cool his draft beer for consumption Proprietor Foss is using a Kelvinator-Temprite instantaneous cooler which serves two beer draft arms and a water faucet.

"There is no comparison between modern methods of cooling beer and the pre-prohibition method," declares Mr. Foss. "With the modern equipment you are assured that the first glass of beer drawn will be as good as the last.

"There is no necessity to draw off several glasses when you open up for the day, because the beer hasn't warmed up overnight. This allows you to realize a profit on every glass sold.

BOTTLED BEER COOLED IN G.E. CONDITIONED-AIR UNIT

FT. WAYNE, Ind.—C. E. Augustinyck, proprietor of a cafe here, purchased a G. E. 45-cu. ft. commercial refrigerator with conditioned-air evaporator to cool bottled beer recently. Mr. Augustinyck sold nearly 600 cases of beer in the first two weeks.

A ¼-hp. unit is handling this installation, and the refrigerator maintains temperatures of from 38° to 40° F.

Curtis Builds Automatic Beer Pump

ST. LOUIS—A beer pump of compact design and completely automatic operation is being offered by the Curtis Pneumatic Machinery Co., manufacturer of air compressors and commercial refrigerating machines.

The Curtis pump measures 19¾ in. long, 18¼ in. high, and 12¼ in wide. It is equipped with a 1/6-hp. motor for a V-belt drive.

Sufficient pressures are maintained at all times by means of a switch control.

Nathan System Produces Beer Faster, Uses No Brewing Cellars

CHICAGO—Production of beer without the conventional beer cellars, in about two weeks instead of the customary two or three months, and with considerably smaller plants and less machinery was described in Monday's session of the American Society of Refrigerating Engineers here last week. The new brewing system was developed by Dr. L. Nathan of Zurich, Switzerland, during the days of American prohibition, and is now being used in several European countries.

The paper describing the system was prepared by Dr. Nathan, and presented by Dr. J. C. Goosman of New York City because Dr. Nathan is not fully acquainted with the English language. At intervals during the presentation, Dr. Nathan arose from the platform to clarify certain points of the discussion.

Innovations of the Nathan system include changes in the wort cooling and fermentation, but do not require any changes in the brewhouse. Brewing methods are the same, hence beer produced by the Nathan system does not represent a particular type, as the type is defined in the brewhouse by the raw materials used, and by the mashing and brewing process, the speakers pointed out.

Better Production Control

"What the Nathan system performs is a better control of the production from the brewhouse down to the bottling of the beer, maintenance of sterility throughout the production, and production at a lower cost," Dr. Goosman claimed in reading the paper.

Most breweries in Central Europe use the so-called "Kuehlschiff" or cool-ship, a flat open vessel which brings the hot wort quickly into contact with a large surface of air, permitting rapid withdrawal of vapors, and furnishing deposition of part of the "Trub" (coagulated matter) on the cool-ship, the speakers reported.

Disadvantages connected with the cool-ship are the necessity for withdrawal of vapors from the cooling wort (since admission of air creates oxidation products), moreover this air withdrawal depends too much on outside climatic conditions (on damp days the beer may be affected by the moisture), and proper sterilization is difficult.

Cool-Ships Abandoned

For these reasons most American brewers have abandoned cool-ships in favor of sterile closed coolers, Dr. Nathan stated, the slower oxidation and vapor withdrawal evidently being regarded as minor disadvantages as compared with the dangers of infection possible with the cool-ship.

He declared that the Nathan system of wort cooling preserves sterility while performing the desirable functions of a cool-ship, namely:

1. Rapid chilling of the hot wort, under conditions which expose a large surface of the atmosphere while the wort is under agitation.
2. Access of large amounts of sterile air, permitting ready formation of the necessary oxidation products.
3. Rapid withdrawal of vapor and air from the cooler room.
4. Complete elimination of the trub, such as occurs in the cool-ship on cold and clear winter nights.

Elimination of Trub

Elimination of the trub is important, Dr. Nathan explained, in brewing pure fermentation beers, because the yeast remains purer, and can be carried through without washing for a longer period of time.

He also stressed the importance of proper agitation during boiling and cooling, pointing out that it is while the hot wort comes in contact with air that the necessary products of oxidation are formed.

First stage of the Nathan process is cooling and clarifying. Hot wort enters a closed vessel which is cork-insulated against outside temperature. From the top of this vessel, the wort is pumped off to a movable float, and carried to a Baudelot cooler (located in a room containing sterile air).

Air Filtered and Sterilized

This air is filtered and sterilized by special surface filters which admit large quantities of sterile air. Vapors are withdrawn by means of exhausters. During operation of the equipment, no one enters the room, all manipulations being carried on from the outside.

The cooler is sterilized by running boiling water over it for from 5 to 10 minutes without refrigeration. The hot wort then re-enters the first vessel from the bottom, and mixes with the remaining hot wort, and refrigeration of the cooler is turned on to cool the wort down to a fermenting temperature—which is from 39° to 43° F. in the Nathan process.

Cool wort enters the vessel from the bottom, and on account of its higher specific gravity, does not mix with the hot wort. Thus, it was explained, the vessel is gradually filled with cool sterile wort, the trub settling down to horizontal plates in the bottom.

Speed of deposition depends on composition of the wort, raw materials used, and boiling. After the trub is deposited (taking from one to three hours), the clear wort flows by gravity or is pumped into the fermenters, Dr. Goosman continued.

American worts usually contain larger quantities of matter to be eliminated than European worts, since they are richer in albumen, so he believes that the Nathan cooling and clarifying plant has extensive possibilities in this country.

The sediment is cleaned out by means of a stream of high pressure water. This is sufficient with a quick succession of brews, as the following batch of hot wort sterilizes the vessel, the engineers claim.

Dr. Nathan insists on the necessity for sterility of the wort, and advises brewers to install their own pure yeast culture plants using acid-resisting vessels.

In the Nathan system, the cooled wort reaches the fermenters consisting of two welded jackets, one on a cone, the other on the center of the vessel. Through these jackets cooling liquid is circulated.

The fermenters are insulated with cork to prevent loss of refrigeration to the room—which is not refrigerated.

The vessels are sterilized by alcoholic vapors before the sterile wort is run in, the recondensed alcohol running down the sides and is recovered. This process takes about an hour.

After being sterilized, the fermenters receive the sterile wort, and the quantity of yeast required is pressed in, and mixed with the wort by blowing in sterile air. This starts budding of the yeast.

As fermentation starts, the air is slowly expelled from the wort and the space above, by means of the rising CO_2 gas. As the fermenting temperature in this system is low (beginning for light beers at 38° to 40° F., and at 40° to 42° F. for dark beers), sometimes 20 hours pass before the CO_2 gas escapes.

The gas is piped to a gasometer, compressed by compressors to 30 to 45 lbs. pressure, and is passed through a purifying battery to free it of odor, air, and taste.

Conical Tanks

The conical shape of the fermenting vessel causes greater movement of the fermenting beer than would a tank with a flat bottom, Dr. Nathan stated, and would speed up fermentation and growth of the yeast except for the fact that maintenance of lower temperatures and elimination of air counteracts the acceleration effect.

Fermentation is regulated by controlling the CO_2 gas which periodically enters at the cone in a finely divided stream to agitate the beer. The exit gas at this stage carried away the "young bouquet."

When fermentation has progressed to the point where the yeast settles, CO_2 gas pressure of about seven pounds is applied to stop the agitation, and refrigeration of the cone is started to hold the yeast and permit its compression into the yeast storage vessel, the speaker showed.

After the yeast has been removed, CO_2 gas is run through the beer until it is freed of all "young substances." This washing process takes from 24 to 36 hours, and is carried on until the gas escaping on the top has no more smell.

Next the beer is slowly cooled down to 32° or 34° F. by admitting cooling liquid into the jackets, and it is saturated with CO_2 gas under a pressure of five or six pounds. This process takes about 12 hours, Dr. Nathan reported.

Next, the beer is left standing for another half-day while the remaining yeast settles, and the beer gets clear. Finally, the beer is filtered and either filled into reserve tanks or put into barrels or bottles and is ready for sale. Complete production of beer of 11 per cent Balling takes approximately 12 days, he said.

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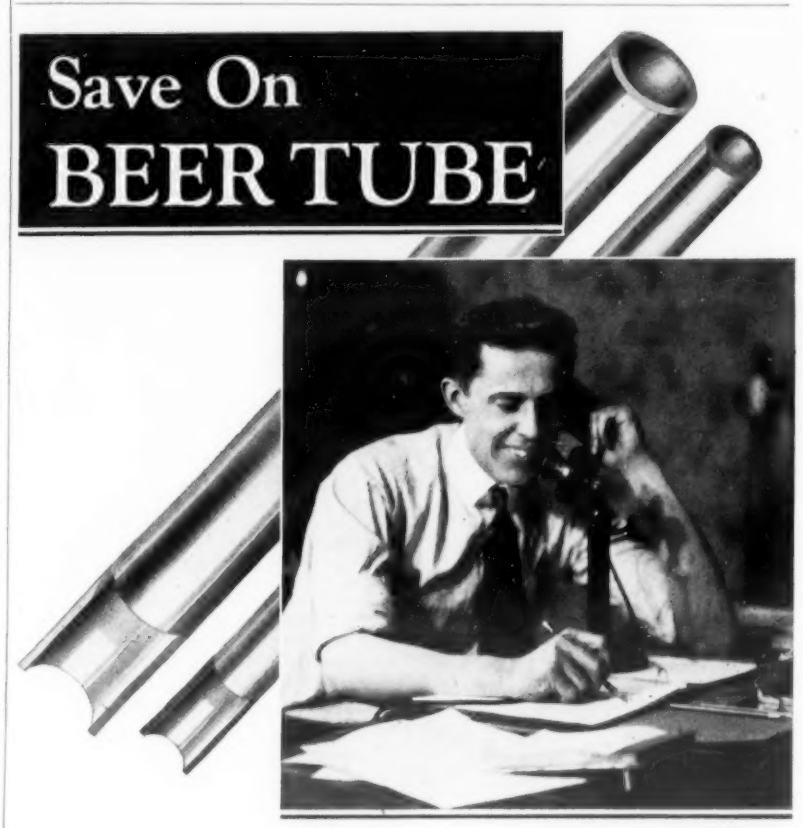

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18-8 Chrome-Nickel Steel Applicable To Beer-Cooling Equipment

By Harry D. Edwards, Linde Air Products Co.,
Past President, American Society Refrigerating Engineers

THE BREWING industry is undoubtedly one of the oldest industries in existence. It is said that an excellent beer was made by the ancient Egyptians, who probably used a pot as a brewing vessel—presumably made originally of sun-dried, and afterwards, of baked clay. In later times, when brewing was largely done in the home and in the monasteries, the ordinary wooden washtub and the copper wash boiler were quite generally used.

These materials served their purpose well enough as long as brewing was done on a small scale, and, as a matter of fact, they are still being used to some extent in modern breweries. As the brewing industry developed, many other materials were used for vessel construction, and today we find that beer and wort come in contact with a variety of substances such as wood, stone, slate, iron, copper, lead, tin, nickel, Monel metal, aluminum, glass enameled steel and stainless steel.

Many of these materials have some very definite disadvantages for use in brewery equipment. Some of them are difficult to fabricate, others are hard to keep clean, still others cause a "haziness" or turbidity in the beer, Some of the metals impart an undesirable flavor to the beer; some are easily attacked by the chemical cleansing agents used; while others adversely affect the fermentation process.

Effects of and on Brew

In considering the application of materials for the brewing industry, there are two questions of particular importance, namely, will the material be affected by the brew or will the quality of the brew be affected by the material.

It is of interest to look back and note the progress made in the past on the problem of suitable construction materials for brewery equipment. In olden times wood was the most easily obtained material of construction, so it was natural that this should have been the first used in the brewing industry.

Then the realization that wood, because of the process of decay which eventually sets in, might possibly introduce harmful substances into the beer, led to the application of a protective coating, which was itself not attacked by the liquids with which it came in contact and which retarded the process of decay.

The pitching of wooden vessels served this purpose. The good heat insulation properties of wood, its excellent resistance to heavy shocks and blows, and its comparatively low cost of fabrication have given it preference through the years.

The suitability of wooden vessels is, however, dependent upon careful pitching and the correct composition of the materials used. Otherwise, the beer acquires an unpleasant pitchy taste, and with defective pitching there is always the danger of infection.

Probably the first metal used in connection with brewing was copper, because of the ease with which it could be fabricated, and because of its high resistance to the corrosive attack of beer and of the raw materials used in its manufacture. In every brewery we see copper, mainly in the shape of boiling kettles and piping.

With the development of the iron industry, this metal soon found use in breweries in the form of iron barrels and iron piping. In order to prevent rusting, the iron apparatus was given a protective coating of varnish. However, any cracking or peeling of the coating allowed oxidation to take place, with the result that the taste of the beer was seriously affected.

Enameling the iron provided complete protection, but its extreme brittleness proved highly disadvantageous in the face of a blow or shock. Tin was then chosen as a coating for the inner surface of the iron vessel.

In more recent times, aluminum, pure nickel and Monel metal have been used for various applications in the brewing industry, and some very satisfactory results have been obtained.

Stainless Steel Alloy

A new metal is coming into wider use today—a stainless alloy steel containing approximately 18 per cent chromium and eight per cent nickel. The earliest tests of this chrome-nickel alloy steel were made by German brewers about 1921.

Satisfactory results brought wider applications, and about 1925 the use of the stainless alloy began to spread, not only in Germany, but also in German-made brewery equipment exported to overseas countries. Thus by laboratory tests and by actual use in breweries, 18-8 chrome-nickel steel has been shown to be the ideal material for brewing equipment.

The suitability of this steel for the brewing industry has been exhaustively investigated by the British Bureau of Bio-Technology. A series of fermentations were conducted in a vessel made from the 18 per cent chromium-8 per cent nickel steel with a view to ascertaining the effect of the beer upon the steel and the effect of the steel upon the beer.

The character of the beers produced in the vessel was, without exception, excellent as regards brilliancy, flavor, fullness, conditioning and head retention. Furthermore, there was no action on the steel.

The latter did not affect the yeast, nor disturb attenuation, nor in any way impair the quality of the beer, as judged from the absence of any adverse influence on color, flavor and stability. The steel proved to be inert to the action of fermentation.

It was proved that the surfaces of vessels made from this steel can be cleansed with the greatest of ease, and that, when proper precautions are taken, the steel is immune to the corrosive action of the various cleansing agents, including dilute sodium hypochlorite, which is frequently employed as a sterilizing agent.

No Change in Weight

Continued use of a small test vessel for fermentation, over a period of six weeks, resulted in no change of total weight. Wort brewed in stainless steel vats was tested for metallic content and indications showed that the wort was free from contamination. German brewers point out another advantage in its non-magnetic qualities, so that it is unaffected by any possible galvanic currents.

There are many applications of stainless steel in breweries; such as storage tanks, cooling coils, fermentation vats, yeast vessels, pressure tanks, ice coils, siphons, yeast pans, measuring vessels, piping, and both plain and armor-clad barrels.

Shavings beds or clarifiers, in the form of channels of stainless steel sheets, have been designed to be installed in storage tanks in order to give an increased surface for the deposition of the yeast. This makes unnecessary the use of the ordinary wooden slats, which, in spite of periodical boiling, are always a source of uncleanliness.

Experiments are still under way to determine the suitability of stainless steel for a number of applications such as coolers, heat exchangers, filter presses, and bottle washing machinery.

Stainless steel beer barrels have probably received more attention than any other piece of equipment in the brewing industry. Just as the stainless steel milk can has been found efficient and profitable, so the brewers have been adopting metal kegs.

In a recent article by Mr. George S. Herrick, it was stated that German fabricators are producing 2,000 to 5,000 stainless steel kegs annually. These represent an aggregate of 1,000,000 liters or 264,000 gal. capacity, distributed in containers ranging from 1⅓ to 132 gals. each. These are not only used in domestic delivery of beer but also have proved especially useful for export.

It has been stated that some German brewers are using stainless steel kegs for transporting their beverage to overseas markets, and instead of having these drums returned emptied, are having them refilled with native wine for return to Germany.

Such an exchange of contents would scarcely be possible with wooden casks, which, after absorbing wine, are considered unfit for other purposes. There is, furthermore, an additional advantage in the lightness of the metal drum. It is said that a truck can transport 1,050 gals. in stainless steel barrels, compared with 780 gals. in wooden kegs.

At the present time, there are two types of stainless steel beer barrels in use. One of these consists of a single walled drum, which is usually fabricated from two halves. Each of these halves is drawn to the required depth, after which it is given a rib around the circumference in order to stiffen the barrel and to permit easy rolling.

Projection rings are welded to the heads of the barrel in order to permit it to stand firmly upright and to prevent serious damage in handling. Hand holes are provided in the projection ring. When completed, the two halves are welded together.

Double Shelled Barrels

In order to prevent the possibility of heat transfer through the metal to the brew when exposed for any length of time to the sun, another type of barrel has been designed having an inner and outer shell. The inner shell is fabricated from stainless steel sheet of a minimum thickness to withstand bending and distortion both from the pasteurization process and from rough handling.

The exterior shell of the barrel is made from ordinary carbon steel, shaped to resemble the old-fashioned wooden barrel. It is claimed that this type of construction has several advantages over the single walled stainless steel barrel.

The outer shell of carbon steel together with the inner shell of stainless steel provides a stronger barrel, and one which has been shown to be highly resistant to leakage and damage from excessively rough handling and dropping.

The air space between the inner and outer shell of these barrels has excellent insulating properties, with the result that heat transference through the barrel is greatly reduced. And finally, the initial cost of the keg is lower than when only stainless steel is used. At the present time, this latter type of metal barrel has found favor among American brewers, and brewing equipment manufacturers are already producing the double-walled barrel in this country.

Good Physical Properties

Stainless steel of the 18-8 chrome-nickel variety shows excellent physical properties. Its high tensile strength coupled with good ductility render it highly adaptable for fabrication into the great variety of shapes required for brewery equipment.

Because of its great strength, the use of lighter gauge sheet is possible, although the same strength in the finished product is obtained. However, its outstanding characteristics are great resistance to tarnishing and corrosion.

It shows great resistance to rusting at ordinary temperatures and scaling at high temperatures and to oxidizing agents, such as nitric acid, sulphur and numerous sulphur compounds, and to organic acids such as are found in fruits, meats, vegetables and dairy products.

Another great mechanical advantage of chromium-nickel steel lies in its adaptability to welding. This has been found to be particularly true in the case of the stainless steel containing small amounts of titanium. Modern industrial methods in every field demand the increasing use of welding for both fabrication and repair.

Brewery engineers, like their associates in the power and refrigeration fields, are rapidly turning to welding in the economical modernization and maintenance of breweries and in the building of new equipment for the brewing industry.

Use of the oxy-acetylene process for such work is rapidly increasing, and brewery engineers are recognizing that what the power, chemical and process industries have found to be good is also of advantage to them. The brewing industry has developed beyond the guild existence and is today truly a chemical or process industry. It is therefore only natural that brewery engineering should advance rapidly by profiting through the experience of its parent field.

Because of its excellent physical and chemical properties, stainless steel has rapidly become the most popular material of construction in the food, dairy and related fields, where it is of the utmost importance that the appearance, odor, taste and keeping quality of the product must not be affected by the materials with which it comes in contact.

It is only natural, therefore, that the rehabilitated brewing industry, now coming back into its own after a long succession of lean years, should carefully investigate the material that has proved so successful in other industries where similar characteristics are required.

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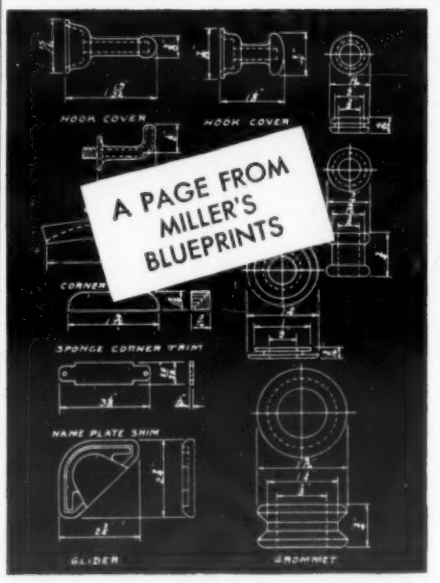

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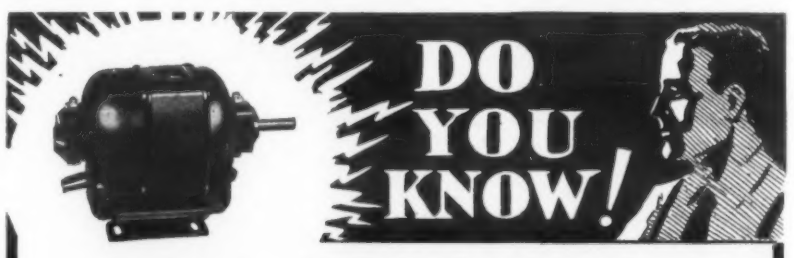

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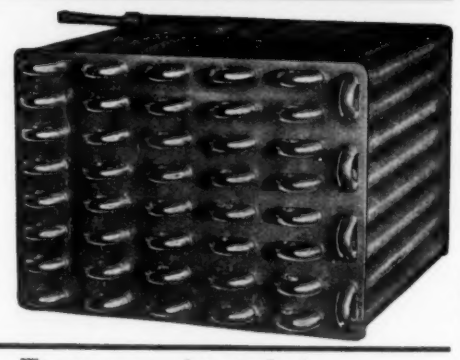

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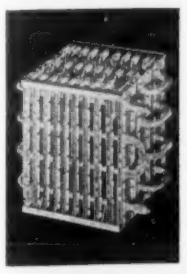
Makers of Rome Condensers and Helical Finned Tubing

We carry a complete stock of
EVERYTHING IN REFRIGERATION
including
FEDDERS COMMERCIAL COILS
Thermostatic Expansion Valves, Tubing, Manifolds, Fittings, Controls, etc.



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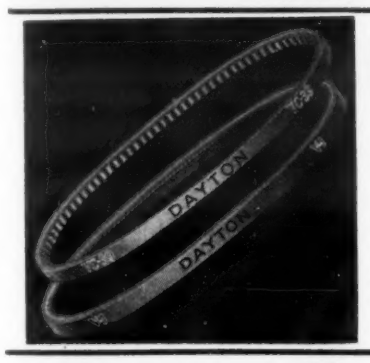


Dayton V-Belts

For all makes and types of refrigerators. There is a stock near you. Ask for price list and name of your nearest distributor.

THE DAYTON RUBBER MFG. CO.
Dayton, Ohio
The World's Largest Manufacturer of V-Belts

JUST OFF THE PRESS!

The NEW KRAMER REFRIGERATION CATALOG

A request will bring it to you.

Complete listing of COMMERCIAL EVAPORATORS for all refrigerants—
Domestic Evaporators—Condensers—Unit Coolers—Fittings—Controls

TRENTON AUTO RADIATOR WORKS
New York, N.Y. 241 W. 68th St. | Main Office and Factory TRENTON, NEW JERSEY | Pittsburgh, Pa. 5145 Liberty Ave.

ICE CUBES THE MODERN WAY

Flexible rubber trays for all types and makes of mechanical refrigerators. Also flexible rubber grids for all metal trays.
See your distributor—the maker of the refrigerator you sell—or write for money-making facts to The Inland Manufacturing Company, Dayton, Ohio.

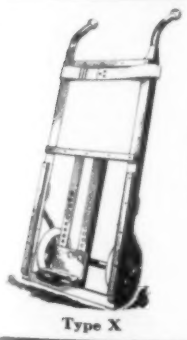
Flexo Trays • Flexo Grids

The Dayton
CARRIER Truck
Deliver Your Refrigerators on Rubber

Type X has 53 inch Handles and 8 inch Rubber Wheels. Type Y has 70 inch Handles, 5 inch Rubber Wheels and skids.

Type X with one strap $16.00
Type Y with one strap $17.50
f.o.b. Dayton

INTERNATIONAL ENG. INC.
Dayton, Ohio
15 Park Row — N.Y.


Type X


Type Y

COMBINATION SUBSCRIPTION RATES

How to save money on your subscription order

NO.	PUBLICATIONS	YOU PAY	YOU SAVE
1	Electric Refrigeration News (1 Year) and Refrigeration Directory and Market Data Book*	$3.50	$ .50
2	Electric Refrigeration News (2 Years) and Refrigeration Directory and Market Data Book*	$5.50	$1.50
3	Refrigerated Food News (1 Year) and Refrigeration Directory and Market Data Book*	$1.50	$ .50
4	Refrigerated Food News (1 Year) and Electric Refrigeration News (1 Year)	$3.50	$ .50
5	Refrigeration Directory and Market Data Book* and Electric Refrigeration News (1 Year) and Refrigerated Food News (1 Year)	$4.00	$1.00
6	Refrigeration Directory and Market Data Book* and Electric Refrigeration News (17 Weeks)	$1.50	$ .50

Order by number. Use coupon below. These rates for U. S. only.
*October, 1932, edition with Supplement, 590 pages, paper covers.

QUESTIONS

"Nosmel"

No. 1272 (Distributor, Connecticut)—"What company manufactures the odor absorber known as 'Nosmel' which is distributed by the Jomak Distributing Corp., 570 Seventh Ave., New York City?"

Answer—The Emeloid Co., Inc., 287 Laurel Ave., Arlington, N. J.

Service Parts and Tools

No. 1273 (Service man, Washington, D. C.)—"Will you please tell me where I can get a catalog to buy all kinds of parts and tools for refrigeration service."

Answer—See list of companies in the REFRIGERATION DIRECTORY AND MARKET DATA BOOK which specialize in these supplies.

Counter Freezers

No. 1274 (Engineers, Australia)—"We are interested in the American idea of selling small ice cream making equipment to the retailer who has ice cream holding equipment, and will appreciate receiving the latest information on this type of apparatus."

Answer—Here is a list of companies manufacturing "counter freezers" as we call them in this country:

Bettercreme Systems, 225 Rivoli St., San Francisco, Calif.; S. J. Jasper Co., 845 N. Plankinton St., Milwaukee, Wis.; Grand Rapids Store Equipment Corp., Grand Rapids, Mich.; Harder Refrigerator Corp., Cobleskill, N. Y.; Knight Soda Fountain Co., 2701 N. Kildare Ave., Chicago, Ill.; Mills Novelty Co., 4100 Fullerton Ave., Chicago, Ill.; Parker Freezer Co., 150 Nassau St., New York, N. Y.; Sherer-Gillette Co., Marshall, Mich.; Taylor Freezer Corp., Beloit, Wis.; Emery Thompson Machine & Supply Co., 271 Rider Ave., New York, N. Y.; Tuthill Pump Co., 131 W. 63rd St., Chicago, Ill., and Wolfe Engineering & Sales Corp., 1136 Market St., Philadelphia, Pa.

Statistics

No. 1275 (Dealer, Virginia)—"We have on several occasions heard through customers that Frigidaire salesmen make the statement that General Motors puts out 64 per cent of all domestic refrigeration that is used in the United States.

"As a matter of information for ourselves, will you kindly give us your idea of what percentage Frigidaire actually does handle."

Answer—Monthly statistics on sales and stocks of all companies having membership in the Refrigeration Division of the National Electrical Manufacturers Association are published regularly in ELECTRIC REFRIGERATION NEWS.

These 12 companies furnish their figures to the statistical department of the association, and *totals only* are released officially through the columns of the NEWS. These figures do not, however, show the sales *by companies*, and we, therefore, are unable to determine definitely the rank of the leaders.

Rubber Gaskets

No. 1276 (Manufacturer, Utah)—"Can you give us names and addresses of companies manufacturing rubber gaskets?"

Answer—See list on page 202 of the REFRIGERATION DIRECTORY AND MARKET DATA BOOK.

Carrene

No. 1277 (Lumber company, Texas)—"What is Carrene? Have any tests been made with this gas showing any advantages over other refrigerants?

"How long have the following electric refrigerators been on the market: Norge, General Electric, Westinghouse, Frigidaire, Grunow, Gibson?"

Answer — Carrene is chemically known as methylene dichloride, a refrigerant that has been used in large air-conditioning systems for some years by Carrier Engineering Corp. A technical comparison of all common refrigerants, including Carrene, was published in the Dec. 30, 1931, issue of ELECTRIC REFRIGERATION NEWS.

The makes of refrigerators named have been on the market for the following periods: Norge, 7 years; General Electric, 5 years; Westinghouse, 3½ years; Frigidaire, 14 years; Grunow, six months; and Gibson, two years.

Beer Cooling

No. 1278—(Manufacturer, Illinois)—"We are wondering if you have a list of refrigeration manufacturers who are making beer coolers."

Answer—See this issue of ELECTRIC REFRIGERATION NEWS which features a directory of companies making beer coolers and specifications of leading makes.

Dry Ice Household Refrigerators

No. 1279 (Indiana)—"In a recent report submitted by the American Consul at Leipzig, Germany, about the various types of refrigerating machinery and ice boxes exhibited at the 1933 Spring Engineering Leipzig Fair, I noted that reference was made to an ice box suitable for dry ice.

"We do not have available any detailed information on the development of dry ice for domestic purposes in the United States, and if you have any information on this subject, I shall be pleased to hear from you."

Answer—Only one household refrigerator has been introduced in the American market for consumption of solid carbon dioxide. This is the Carba refrigerator which was described in the Sept. 21, 1932, issue of ELECTRIC REFRIGERATION NEWS.

This refrigerator was designed by European engineers, and American patent rights subsequently acquired by the International Carbonic Engineering Co., Kennett Square, Pa. It is now being manufactured and sold by Fleetwood Sales Co., 4519 Walnut St., Philadelphia, Pa.

Machines for Use in Ice Boxes

No. 1280 (Washington, D. C.)—"One of our local contacts, Mr. Thv. Ravnsborg, Raadhusgt. 20, Oslo, Norway, has inquired as to whether or not any American manufacturers of refrigeration machinery can supply refrigeration units to be used with household refrigerators not originally built for such installation. Can you give us any information on this subject?"

Answer — Refrigerating engineers frequently hesitate to install electric refrigerating machines in old ice boxes, because ice boxes are seldom built to hold the low temperature produced. Often the insulation is insufficient, and the general construction of the box inadequate. However, it is quite feasible if the cabinet construction is good. We suggest you refer Mr. Ravnsborg to the list of condensing unit manufacturers in the REFRIGERATION DIRECTORY AND MARKET DATA BOOK.

G. E. COMMERCIAL UNITS USED IN N. Y. RESTAURANT

NEW YORK CITY—One of the largest commercial orders of the season has been obtained by A. E. Stone in the commercial department of Rex Cole, Inc., General Electric distributor here.

The equipment, which is for the Gerard Cafeteria, 1506 Broadway, in the heart of Times Square, includes the following: 25-ft. long storage cabinet for meat, vegetables, berries, beer; smaller cabinet used for garbage storage; bakery cabinet.

Behind the counter there will be two short-order boxes and three counter refrigerators 15 ft. long. A three-section salad pan, a two-tap beer dispenser; a storage cabinet for two one-half kegs of beer; two water cooler tanks; and a two-hole ice cream cabinet round out the order.

Five EC-7 air-conditioned units, two CM-8 3-hp. compressors, and a CB-32 will cool some of the cabinets. The garbage, short order and counter refrigerators have fin coil equipment.

G. E. Comfort Cooling Units Installed

NEW YORK CITY—A. B. Salto of Rex Cole's commercial department here has sold a number of cooling units recently.

Horn and Hardart has installed General Electric comfort cooling in its branch at 271 East Fordham Road. Room-cooling equipment also has been installed in the offices of Barr Bros., brokers, 15 Broad St.

The Ozalid Co. at 354 Fourth Ave., agent of the Zeppelin Corp. of Germany, has ordered comfort-cooling equipment through Mr. Salto for its storeroom where special chemicals must be kept at a consistently low temperature.

Plainfield Refrigeration Bureau Started

PLAINFIELD, N. J.—A local chapter of the Electric Refrigeration Bureau, including representatives of 10 different makes of refrigerators, has been organized here, and plans have been consummated for a show to be held in the former showroom of the Packard motor car, July 8 to 15.

A. J. Orbach of Union Motor Co., dealer in Westinghouse and Norge refrigerators, is president; Charles Kelly, agent for Public Service Electric & Gas Co., is secretary-treasurer.

William J. Regan, manager of Plainfield Motor Co., General Electric dealer here, helped organize the group.

MUELLER LUMBER CO. SPONSORS LECTURES

DAVENPORT, Iowa—Lectures and store demonstrations on food preservation have been conducted recently by Miss Margaret Macy at two-week intervals during the past few months in the display room of Mueller Lumber Co., Kelvinator distributor here.

Prospects were invited from within a radius of 12 to 15 miles around Davenport, about 25 attending each session.

CLASSIFIED

PAYMENT in advance is required for advertising in this column.

RATES: Fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each.

POSITIONS WANTED

POSITION desired as sales engineer or sales supervisor in charge of commercial refrigeration sales. Thoroughly familiar with every phase of Commercial Electric Refrigeration from first contact with prospect to completion of installation, having had several years' experience with the leading makes. Nominal salary and commission. Address Box 576.

DISTRICT SALES REPRESENTATIVE wants connection with manufacturer of commercial and domestic refrigeration. Five years' experience as district representative in middle western states. Would like to make new connection at once. Box 577.

BUSINESS FOR SALE

FOR SALE: One of the oldest and best refrigeration businesses in New England, employing four installation men. Well advertised. Selling on account of sickness. Marsden's Store Fixture House, Inc., James Street, East Providence, R. I.

MISCELLANEOUS

A National Manufacturer of an Automatic Control for dispensing, and preserving Beverages and Beer, wants wholesale men, Distributors, Independent Service men for contract, all Territories, United States. Also wants Manufacturer who will manufacture high pressure controls. Reference and experience first letter. Box 575.

FOR SALE

At a low price, an overstock of new Electric Refrigerator Cabinets. 4 1/2 and and 6 1/2 ft. porcelain inside, lacquer outside.

REPLY BOX 574
Electric Refrigeration News

Addressed to the Manufacturers of Domestic Refrigerating Equipment

You are cordially invited to investigate the merits of a new and novel domestic refrigerating development embodying practical and outstanding features particularly appealing to the customer. Furthermore, as a means of strengthening your position under the new governmental regulations this development presents unusual possibilities.

If interested, kindly address Box 578, ELECTRIC REFRIGERATION NEWS

Practical . . .

THE U. E. I. practical problem method of training is combined with actual practice on all types of refrigerating equipment. Thus, employers who insist on U. E. I. trained installation and service men are assured of freedom from service worries.

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Wells at Kinzie Street, Chicago, Ill.
Complete And Practical Refrigeration Training By Extension Methods

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